SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 709

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, AND EASTMAN KODAK STORES, INC., PETITIONERS,

vs.

CHARLES B. GRAY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT.

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IN UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA, MARCH TERM, 1930.

No. 15306

CHARLES B. GRAY

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK STORES, INC., EASTMAN KODAK COMPANY OF NEW YORK

Leon Edelson.
Ballard, Spahr, Andrews & Ingersoll.

DOCKET ENTRIES

Mar. 24, 1930. Præcipe to issue Summons filed.
Mar. 24, 1930. Summons exit—returnable 1st Monday in April, 1930.
Mar. 24, 1930. Statement of Claim filed.
Apr. 3, 1930. Summons returned; "on March 27, served each defendant" and filed.
Apr. 7, 1930. Notice to file Affidavit of Defense and proof of service filed.
May 5, 1930. Appearance of Pennie, Davis, Marvin and Edmonds, Esqs., and Ballard, Spahr, Andrews & Ingersoll, Esqs., for Eastman Kodak Stores, Inc., filed.
May 5, 1930. Eastman Kodak Stores, Inc., pleads Not Guilty with notice of special matters filed.

[fol. 2]

May 5, 1930. Motion by Eastman Kodak Company to quash summons; Affidavits in support thereof; and Order of Court granting rule to show cause why summons should not be quashed, etc., filed.
May 13, 1930. Answer to motion by Eastman Kodak Company to quash summons, etc., filed.
June 4, 1930. Petition for and Order of Court directing that defendants show cause why statement of claim should not be amended, filed.

June 5, 1930. Amendment to motion to quash summons and to set aside service as to Eastman Kodak Company, filed.

June 6, 1930. In open Court Rule to amend Statement of Claim allowed.

June 9, 1930. Præcipe to issue alias summons filed.

June 9, 1930. Alias summons exit—returnable 1st Monday in July, 1930.

June 9, 1930. Amended Statement of Claim filed.

June 9, 1930. Notice to file Affidavit of Defense filed.

June 11, 1930. Alias Summons returned: "on June 9, served Eastman Kodak Company of New York", and filed.

June 13, 1930. Plea of Not Guilty by Eastman Kodak Stores, Inc., filed.

June 13, 1930. Motion by Eastman Kodak Company (of New York) to quash summons and to set aside service filed.

June 13, 1930. Affidavits in re Motion by Eastman Kodak Company (of New York) to quash summons and to set aside service filed.

[fol. 3]

June 13, 1930. Order of Court granting rule to show cause why writ should not be quashed and service set aside as to Eastman Kodak Company of New York, filed.

June 19, 1930. Amendment to motion to quash summons and to set aside service as to Eastman Kodak Company (of New York), filed.

June 26, 1930. Deposition of L. B. Jones on behalf of defendant filed.

July 16, 1930. Argued sur motion to quash summons and set aside service thereof.

July 23, 1930. Opinion, Dickinson, J., discharging rules to set aside return of service filed.

July 30, 1930. Exception by Eastman Kodak Company (New York) to discharge of rule to quash summons and set aside service filed.

July 30, 1930. Exception by Eastman Kodak Company (New Jersey) to discharge of rule to quash summons and set aside service filed.

July 30, 1930. Order of Court disallowing exceptions by Eastman Kodak Company (New York) and (New Jersey) filed.

Aug. 12, 1930. Petition of Defendants for re-hearing filed.
Aug. 20, 1930. Answer to petition for re-hearing filed.
Aug. 20, 1930. Order directing that motion for re-hearing be argued, etc., filed.

[fol. 4]

Sept. 17, 1930. Argued sur motion for re-hearing.
Sept. 23, 1930. Opinion, Dickinson, J., discharging rule for re-argument filed.
Oct. 28, 1930. Præcipe to place case on trial list filed.
Feb. 19, 1931. Plea by Eastman Kodak Company (of New York) to statement of claim as amended filed.
Feb. 19, 1931. Plea by Eastman Kodak Company (of New Jersey) to statement of claim as amended filed.
Nov. 18, 1931. Jury called.
Dec. 10, 1931. Trial resumed.
Dec. 11, 1931. Trial resumed.
Dec. 12, 1931. Trial resumed.
Dec. 14, 1931. Verdict for plaintiff—damages assessed at $153,553.18.
Dec. 18, 1931. Motion for new trial and to set aside verdict filed.
Dec. 31, 1931. Additional reasons for new trial filed.
Jan. 9, 1932. Plaintiff's motion for judgment on the verdict and assessment of treble damages filed.
Jan. 13, 1932. Argued sur motion for new trial.
Jan. 20, 1932. Opinion, Dickinson, J., making absolute rule for new trial filed.
Feb. 11, 1932. Stipulation of counsel waiving trial by jury filed.
Mar. 17, 1932. Argued sur Pleadings and Proofs.
July 13, 1932. Deposition sur motion to quash summons and set aside service filed.

[fol. 5]

July 13, 1932. Opinion, Kirkpatrick, J., granting leave to enter judgment for defendants filed.
July 16, 1932. Præcipe to enter judgment filed.
July 16, 1932. Judgment in favor of defendants filed.
Aug. 2, 1932. Plaintiff's bill of exceptions sealed and filed.
Aug. 15, 1932. Assignments of Error filed.
Aug. 15, 1932. Petition for appeal filed.

Aug. 15, 1932. Order of Court allowing appeal filed.
Aug. 15, 1932. Bond for costs sur appeal, with surety, in $250 and order of court approving same filed.
Aug. 15, 1932. Citation allowed and issued.
Aug. 15, 1932. Copy of Notice of Appeal filed.
Aug. 17, 1932. Citation returned: "service accepted" and filed.
Aug. 17, 1932. Præcipe for transcript of record sur appeal filed.
Aug. 18, 1932. Notice of special matters of defense by Eastman Kodak Stores, Inc., filed.
Aug. 18, 1932. Further Notice of special matters of defense by Eastman Kodak Stores, Inc., filed.
Aug. 18, 1932. Further Notice of special matters of defense by Eastman Kodak Stores, Inc., filed.
Sept. 6, 1932. Transcript of record transmitted to counsel for plaintiff-appellant.
Sept. 12, 1932. Decree extending return day on Citation filed.
Oct. 11. 1932. Stipulation of counsel with regard to portions of testimony and as to certain exhibits, filed.

[fol. 6] IN UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

[Title omitted]

STIPULATION AS TO RECORD

It is hereby stipulated and agreed by and between counsel for plaintiff and counsel for defendants in the above-entitled case that, except as hereinafter provided, the following portions of the stenographic notes of testimony need not be included as part of the record on appeal and are to be excluded from the printed record:

1. All of the matter commencing at line 15, page 65, to and including line 12, page 139, of the stenographic notes of testimony.

2. All of the matter included between line 8, page 180, and line 6, page 186, of the stenographic notes of testimony.

With the exception of Plaintiff's Exhibits Nos. 33, 34 and 35 and Defendants' Exhibit No. 2, all of the exhibits [fol. 7] referred to in the above portions of the stenographic notes of testimony shall be filed with the clerk of the Circuit Court of Appeals together with all other exhibits offered in evidence by the respective parties. With respect to plaintiff's said Exhibits Nos. 33, 34 and 35, and defendants' said Exhibit No. 2, the same are excluded from the record on appeal and shall not be filed with the clerk of the Circuit Court of Appeals.

Leon Edelson, Counsel for Plaintiff. Pennie, Davis, Marvin & Edmonds, Counsel for Defendants.

Dated September 30, 1932.

[fol. 8] IN UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA, MARCH TERM, 1930

No. 15,306

Action at Law for Infringement of Patent No. 1,314,867

CHARLES B. GRAY, Plaintiff,

v.

EASTMAN KODAK COMPANY and EASTMAN KODAK STORES, INC., Defendants

STATEMENT OF CLAIM—Filed March 24, 1930

Charles B. Gray, of Millbourne, in the County of Delaware, State of Pennsylvania, who is a citizen of said State of Pennsylvania and of the United States, complains of the Eastman Kodak Company and the Eastman Kodak Stores, Inc., defendants, of an action of trespass, and says:

1. That the defendant, Eastman Kodak Company, is a foreign corporation, created and organized under the laws of the State of New Jersey and that the defendant, Eastman Kodak Stores, Inc., is a corporation created and organized under the laws of the State of Pennsylvania, having its principal place of business in the City of Philadelphia, at 1020 Chestnut Streets, in said State of Pennsylvania.

[fol. 9] II. Plaintiff avers, on information and belief, that the defendant, Eastman Kodak Company, is the owner of at least a majority of the voting stock of defendant, Eastman Kodak Stores, Inc., and controls, governs and directs its policies and business; that Eastman Kodak Stores, Inc., is one of a number of subsidiary selling organizations wholly owned by the Eastman Kodak Company, and as such is an agent of the Eastman Kodak Company through which the latter sells and delivers cameras and appurtenant parts and accessories therefor; and that the Eastman Kodak Company now maintains and for some considerable time past has maintained, through said Eastman Kodak Stores, Inc., a regular and established place of business in the City of Philadelphia, Pennsylvania, where it carries a stock of Eastman Kodak cameras, parts therefor and various other photographic accessories all of which are manufactured by or for the defendant, Eastman Kodak Company, and which it sells and delivers to the public;

III. Plaintiff further avers, on information and belief, that defendant, Eastman Kodak Company, is and at all times herein mentioned has been engaged either in its own behalf or through its subsidiaries in the business of manufacturing cameras and other photographic equipment and accessories, and now is and has been selling the same throughout the United States; that as a part of its said business the Eastman Kodak Company maintains and conducts in the City and County of Philadelphia, State of Pennsylvania, the said Eastman Kodak Stores, Inc., as a branch establishment or agency for selling and trading in cameras and other photographic equipment and accessories; and that in order to so conduct its business the said Eastman Kodak Company wholly owns, controls and directs the policies and business of said Eastman Kodak Stores, Inc.;

[fol. 10] IV. That Charles B. Gray, plaintiff above mentioned, was a citizen of the United States before and at the time of his application for the letters patent hereinafter mentioned; that he was the true, original and first inventor of a certain new and useful invention in "Power Transmitting Mechanism," which is fully shown described and disclosed in the letters patent hereinafter referred to, and which invention relates more particularly to a mechanism for actuating the shutters of cameras; that the same was a

new and useful invention, was not known or used by others in this country, nor patented nor described in any printed publication in this or any foreign country prior to the application of the plaintiff for a patent therefor or before his invention thereof, nor had it been in public use or on sale in the United States more than two years prior to said application for letters patent, nor abandoned, nor was it proved to be abandoned;

V. That the said plaintiff, being as aforesaid the original and first inventor thereof, did, on the seventh day of February, 1918, file his application in the United States Patent Office for a patent therefor, and thereafter, to wit: on the second day of September, 1919, Letters Patent of the United States numbered 1,314,867, for said invention were issued by the Patent Office in due form of law and were delivered to the plaintiff in the name of the United States of America and under the seal of the Patent Office of the United States; and that under and by virtue of said letters patent there was granted to said Charles B. Gray, his heirs or assigns, for the term of seventeen years from the second day of September, 1919, the exclusive right to make, use and sell the said invention throughout the United States and the territories thereof; the aforesaid Letters Patent No. 1,314,867, or a duly certified copy thereof are ready in [fol. 11] court to be produced as and when this Honorable Court may direct, and a copy of said letters patent is attached hereto and made a part hereof;

VI. That the plaintiff has always been and now is the sole owner of all right, title and interest in, to and under the aforesaid Letters Patent No. 1,314,867, and of all rights of recovery thereunder;

VII. That, upon information and belief, the defendants herein, notwithstanding the premises aforesaid and having full knowledge thereof, and in violation of the exclusive rights and privileges secured to plaintiff by the aforesaid letters patent, and utterly disregarding the same, and contriving to injure and damage plaintiff and his said rights after the date of plaintiff's letters patent, and within six years prior to the commencement of this action, without the license or consent of plaintiff, or any license or authority whatsoever, in the State of Pennsylvania, and the eastern district thereof and elsewhere, have wrongfully made,

used and sold power transmitting mechanisms or cable releases containing and embracing the invention described, claimed and patented in and by the letters patent aforesaid and are now jointly infringing said letters patent within the district aforesaid and elsewhere by constructing or causing to be constructed, by using and causing to be used, and by selling and offering for sale, certain new and useful improvements in power transmitting mechanisms or cable releases constructed in accordance with and embodying the principles of the invention described and claimed in the plaintiff's letters patent;

VIII. That all of the aforesaid acts and doings of the defendants are unlawful, wrongful and injurious to the plain-
[fol. 12] tiff, and were done with intent to deprive plaintiff of the rights which he might and otherwise would, have derived from the sale of rights to make and use cable releases embodying said invention; that the defendants' acts and doings are contrary to the exclusive rights secured to plaintiff by the letters patent aforesaid, and in violation of the Statutes of the United States in such cases made and provided, whereby the plaintiff has been and is greatly injured and has been deprived of the large royalties which he might, and otherwise would have derived from the sale of rights to make and use such invention; and that the plaintiff has sustained actual damages thereby to the amount of $500,000;

IX. That plaintiff has given due and actual notice to the said defendants of his said letters patent and of the infringement herein complained of;

X. That plaintiff is informed, and therefore avers, that the said defendants are prepared and ready to continue such infringement, and that the defendant, Eastman Kodak Company, has declared its intention of so doing;

XI. That by force of the Statutes of the United States, the right of action has accrued to the said plaintiff to recover the said actual damages, and such additional amounts not exceeding in all three times the amount of such actual damages as the Court may see fit to adjudge and order, and plaintiff says that by reason of the willful and unjust infringement by said defendants, as herein set forth, that his said actual damages when assessed, should be increased to

a sum equal to three times the amount of said assessments, under the circumstances of said infringement.

[fol. 13] XII. That the defendants, though often requested so to do, have never paid said damages nor any part thereof, but have refused and still refuses to pay said damages.

Wherefore, plaintiff demands judgment for the sum of $1,500,000 against the defendants, and for the costs and disbursements of this case.

(Sgd.) Leon Edelson, Attorney for Plaintiff. White, Parry, Schnader & Maris; T. R. White, of Counsel.

Duly sworn to by Charles B. Gray. Jurat omitted in printing.

[fol. 14] IN UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA

[Title omitted]

STATEMENT OF CLAIM, AS AMENDED—Filed June 9, 1930

Charles B. Gray, of Millbourne, in the County of Delaware, State of Pennsylvania; who is a citizen of said State of Pennsylvania and of the United States complains of the Eastman Kodak Company, the Eastman Kodak Company of New York and the Eastman Kodak Stores, Inc., defendants, of an action of trespass, and says:

I. That the defendant, Eastman Kodak Company, is a foreign corporation, created and organized under the laws of the State of New Jersey; that the defendant, Eastman Kodak Company of New York, is a foreign corporation, created and organized under the laws of the State of New York, and that the defendant Eastman Kodak Stores, Inc., [fol. 15] is a foreign corporation created and organized under the laws of the State of New Jersey having its principal place of business in the City of Philadelphia; at 1020 Chestnut Streets, in said State of Pennsylvania;

II. Plaintiff avers, on information and belief, that the defendant, Eastman Kodak Company, now maintains and for some considerable time past has maintained, a regular and established place of business in the City of Philadel-

phia, Pennsylvania, where it carries a stock of Eastman Kodak cameras, parts therefor and various other photographic accessories, all of which are manufactured by or for the defendant, Eastman Kodak Company of New York, and for the benefit of the Eastman Kodak Company, and which it sells and delivers to the public, and where it has committed acts of infringement on account of which this suit is brought;

III. Plaintiff further avers, on information and belief, that defendant, Eastman Kodak Company of New York, is and at all times herein mentioned has been engaged either in its own behalf or through its subsidiaries, at Rochester, New York, and elsewhere, in the business of manufacturing cameras and other photographic equipment and accessories, and now is and has been selling the same throughout the United States; that as part of its said business the Eastman Kodak Company of New York maintains and conducts a regular and established place of business in the City and County of Philadelphia, State of Pennsylvania, for the purpose of selling and trading in cameras and other photographic equipment and accessories, and where it has committed acts of infringement on account of which this suit is brought;

[fol. 16] IV. That Charles B. Gray, plaintiff above mentioned, was a citizen of the United States before and at the time of his application for the letters patent hereinafter mentioned; that he was the true, original and first inventor of a certain new and useful invention in "Power Transmitting Mechanism," which is fully shown, described and disclosed in the letters patent hereinafter referred to, and which invention relates more particularly to a mechanism for actuating the shutters of cameras; that the same was a new and useful invention, and was not known or used by others in this country, nor patented nor described in any printed publication in this or any foreign country prior to the application of the plaintiff for a patent therefor or before his invention thereof nor had it been in public use or on sale in the United States more than two years prior to said application for letters patent, nor abandoned, nor was it proved to be abandoned;

V. That the said plaintiff, being as aforesaid the original and first inventor thereof, did, on the seventh day of Feb-

ruary, 1918, file his application in the United States Patent Office for a patent therefor, and thereafter, to wit; on the second day of September, 1919, Letters Patent of the United States numbered 1,314,867, for said invention were issued by the Patent Office in due form of law and were delivered to the plaintiff in the name of the United States of America and under the seal of the Patent Office of the United States; and that under and by virtue of said letters patent there was granted to said Charles B. Gray, his heirs or assigns, for the term of seventeen years from the second day of September, 1919, the exclusive right to make, use and sell the said invention throughout the United States and the Territories thereof; the aforesaid Letters Patent No. 1,314,867, or a duly certified copy thereof are ready in court to be produced as and when this Honorable Court [fol. 17] may direct, and a copy of said letters patent is attached hereto and made a part hereof;

VI. That the plaintiff has always been and now is the sole owner of all rights, title and interest in, to and under the aforesaid Letters Patent No. 1,314,867, and of all rights of recovery thereunder;

VII. That, upon information and belief, the defendants herein, notwithstanding the premises aforesaid and having full knowledge thereof, and in violation of the exclusive rights and privileges secured to plaintiff by the aforesaid letters patent, and utterly disregarding the same, and contriving to injure and damage plaintiff and his said rights after the date of plaintiff's letters patent, and within six years prior to the commencement of this action, without the license or consent of plaintiff, or any license or authority whatsoever, in the State of Pennsylvania, and the Eastern District thereof and elsewhere, have wrongfully made, used and sold power transmitting mechanisms or cable releases containing and embracing the invention described, claimed and patented in and by the letters patent aforesaid and are now jointly infringing said letters patent within the district aforesaid and elsewhere by constructing or causing to be constructed, by using and causing to be used, and by selling and offering for sale, certain new and useful improvements in power transmitting mechanisms or cable releases constructed in accordance with and embodying the principles of the invention described and claimed in the plaintiff's letters patent;

VIII. That all of the aforesaid acts and doings of the defendants are unlawful, wrongful and injurious to the plaintiff, and were done with intent to deprive plaintiff of [fol. 18] the rights which he might and otherwise would, have derived from the sale of rights to make and use cable releases embodying said invention; that the defendants' acts and doings are contrary to the exclusive rights secured to plaintiff by the letters patent aforesaid, and in violation of the Statutes of the United States in such cases made and provided, whereby the plaintiff has been and is greatly injured and has been deprived of the large royalties which he might, and otherwise would have derived from the sale of rights to make and use such invention; and that the plaintiff has sustained actual damages thereby to the amount of $500,000;

IX. That plaintiff has given due and actual notice to the said defendants of his said letters patent and of the infringement herein complained of;

X. That plaintiff is informed, and therefore avers, that the said defendants are prepared and ready to continue such infringement, and that the defendant Eastman Kodak Company, has declared its intention of so doing;

XI. That by force of the Statutes of the United States, the right of action has accrued to the said plaintiff to recover the said actual damages, and such additional amounts not exceeding in all three times the amount of such actual damages as the Court may see fit to adjudge and order, and plaintiff says that by reason of the willful and unjust infringement by said defendants, as herein set forth, that his said actual damages when assessed, should be increased to a sum equal to three times the amount of said assessments, under the circumstances of said infringement.

XII. That the defendants, though often requested so to do, have never paid said damages nor any part thereof, but [fol. 19] have refused and still refuse to pay said damages.

Wherefore, plaintiff demands judgment for the sum of $1,500,000 against the defendants, and for the costs and disbursements of this case.

(Sgd.) Leon Edelson, Attorney for Plaintiff. White, Parry, Schnader & Marris; T. R. White, of Counsel.

Duly sworn to by Charles B. Gray. Jurat omitted in printing.

[fol. 20] IN UNITED STATES DISTRICT COURT

NOTICE TO FILE AFFIDAVIT OF DEFENSE—Filed April 7, 1930

To the Above-mentioned Defendants:

You are required to file an affidavit of defense within fifteen days from the service hereof to the statement of claim filed in the above-entitled action and served upon you the twenty-seventh day of March, 1930.

(Sgd.) Leon Edelson, Attorney for Plaintiff.

STATE OF PENNSYLVANIA,
County of Philadelphia, ss:

Personally appeared before me, B. Suzette Kennedy, who, being duly sworn, deposes and says she is the secretary of Leon Edelson, attorney for the plaintiff in the above-entitled action and that she served a copy of the foregoing notice to file an affidavit of defense upon each of the above-named defendants, at twelve o'clock of the fourth day of April, 1930, by leaving a copy for each of said defendants at the office of the Eastman Kodak Stores, Inc., at 1020 Chestnut Street, in the City and County of Philadelphia, and State of Pennsylvania, in charge of Mary C. Kirkpatrick.

(Sgd.) B. Suzette Kennedy.

Sworn to and subscribed before me this fourth day of April, 1930. (Sgd.) Arthur Edward Dennis, Notary Public.

[fol. 21] IN UNITED STATES DISTRICT COURT

PLEA OF DEFENDANT, EASTMAN KODAK STORES, INC.—Filed May 5, 1930

Defendant, Eastman Kodak Stores, Inc., pleads not guilty, with notice of special matters.

(Sgd.) Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York, N. Y.; Ballard, Spahr, Andrews & Ingersoll, 1035 Land Title Bldg., Phila., Pa., Attorneys for Eastman Kodak Stores, Inc.

IN UNITED STATES DISTRICT COURT

PLEA OF DEFENDANT, EASTMAN KODAK STORES, INC., TO STATEMENT OF CLAIM AS AMENDED—Filed June 13, 1930

Defendant, Eastman Kodak Stores, Inc., pleads not guilty, with notice of special matters.

(Sgd.) Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York, N. Y.; Ballard, Spahr, Andrews & Ingersoll, 1035 Land Title Bldg., Phila., Pa., Attorneys for Eastman Kodak Stores, Inc.

[fol. 22] IN UNITED STATES DISTRICT COURT

NOTICE OF SPECIAL MATTERS OF DEFENSE BY DEFENDANT, EASTMAN KODAK STORES, INC.

Defendant, Eastman Kodak Stores, Inc., having pled the general issue hereby gives notice in writing to plaintiff's attorney that it shall prove on trial, any one or more of the following special matters:

1. That the invention or inventions purported to be patented by United States Patent No. 1,314,867 were patented or described in some printed publication prior to said Charles B. Gray's supposed invention or discovery thereof or more than two years prior to his application for a patent therefor, to wit, in the following patents and publications:

United States Patents:

Edwards, 828,815, August 14, 1906.
Edwards, 929,573, July 27, 1909.
Duryea, 1,072,439, Sept. 9, 1913.

British Patents:

Watson, 13,157, of 1905.
Edwards, 15,645, of 1906.
Edwards, 5,741, of 1906.

German Patents:

Wermann, 147,572, May 28, 1902.

and in others not now known to the defendant but of which it shall give due notice when ascertained.

2. That said Charles B. Gray was not the original and first inventor or discoverer of any material or substantial part of the thing patented, all material and substantial parts thereof having been known or used by others in this country before his supposed inventions or discovery [fol. 23] thereof, to wit, by the inventors of the following United States Patents residing at the places indicated in said patents:\

Edwards, 828,815, August 14, 1906.
Edwards, 929,573, July 27, 1909
Duryea, 1,072,439, Sept. 9, 1913.
Dakin & Underwood, 1,297,327, March 18, 1919, (Filed Oct. 15, 1917).

and by:

Eastman Kodak Company of Rochester, N. Y.,
Bausch & Lomb Optical Co. of Rochester, N. Y.,

all at Rochester, New York, and elsewhere in the United States and to and by others not now known to the defendant but of whom it shall give due notice when ascertained.

3. That the invention or inventions purported to be patented thereby were in public use or on sale in this country for more than two years before the plaintiff's application for patent therefor by Eastman Kodak Company of Rochester, New York, at Rochester, New York, and elsewhere in the United States, and by Bausch & Lomb Optical Co. of Rochester, New York, at Rochester, New York, and elsewhere in the United States, and by others not known to the defendant but of whom it shall give due notice when ascertained.

(Sgd.) Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York, N. Y., Attorneys for Eastman Kodak Stores, Inc. George E. Middleton, of Counsel.

To Leon Edelson, Esq., 1505 Land Title Building, Philadelphia, Pa., Attorney for Charles B. Gray.

[fol. 24] Service of the above notice and receipt of a copy acknowledged this ninth day of September, 1930.

(Sgd.) Leon Edelson, 1505 Land Title Bldg., Philadelphia, Pa., Attorney for Charles B. Gray.

September 8, 1930.

IN UNITED STATES DISTRICT COURT

FURTHER NOTICE OF SPECIAL MATTERS OF DEFENSE BY DEFENDANT, EASTMAN KODAK STORES, INC.

Supplementing its notice of September 9, 1930, defendant, Eastman Kodak Stores, Inc., hereby adds to the names of those having prior knowledge or use, as set forth in paragraph 2 of said notice, the following:

E. E. Underwood, of Rochester, N. Y., at Rochester, N. Y.;

C. S. Naramore, of Rochester, N. Y., at Rochester, N. Y.;

A. K. Chapman, of Rochester, N. Y., at Rochester, N. Y.;

D. H. Stewart, of Rochester, N. Y., at Rochester, N. Y.;

W. H. Zimmer, of Rochester, N. Y., at Rochester, N. Y.;

August Krenzer, of Rochester, N. Y.; at Rochester, N. Y.;

L. B. Dodge, of Rochester, N. Y., at Rochester, N. Y.;

H. F. Hoefle, of Rochester, N. Y., at Rochester, N. Y.;

B. MacCallum, of Rochester, N. Y., at Rochester, N. Y.;

[fol. 25] Harold Bennett, of Rochester, N. Y., at Rochester, N. Y.;

Frank Sherman, of Rochester, N. Y., at Rochester, N. Y.

M. J. Frank, of New York, N. Y., at New York, N. Y.;

G. B. Ellestad, of Lanesboro, Minn., at Lanesboro, Minn.;

Louis Mandel, of Chicago, Ill., at Chicago, Ill.;

J. A. Robertson (deceased), formerly of Rochester, N. Y., at Rochester, N. Y.;

R. L. Stinchfield (deceased), formerly of Rochester, N. Y., at Rochester, N. Y.

(Sgd.) Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York, N. Y., Attorneys for Eastman Kodak Stores, Inc. George E. Middleton, of Counsel.

To Leon Edelson, Esq., 1505 Land Title Building,, Philadelphia, Pa., Attorney for Charles B. Gray.

Service of the above notice and receipt of a copy acknowledged this — day of January, 1931.

(Sgd.) Leon Edelson, 1505 Land Title Bldg., Philadelphia, Pa., Attorney for Charles B. Gray.

January 28, 1931.

[fol. 26] IN UNITED STATES DISTRICT COURT

FURTHER NOTICE OF SPECIAL MATTERS OF DEFENSE

Supplementing notices of September 9, 1930, and January 29, 1931, defendants hereby add to the names of those having prior knowledge of use as set forth in paragraph 2 of the notice of September 9, 1930, the following:

Otto Hennig, of New York, N. Y., at New York, N. Y.,

and add to the list of patents and publications as set forth in paragraph 1 of said notice the following:

Catalogue No. 90 of Heinrich Ernemann, of Dresden, Germany, published October, 1904.

(Sgd.) Pennie, Davis, Marvin & Edmonds, Attorneys for Eastman Kodak Stores, Eastman Kodak Company and Eastman Kodak Company of New York (Appearing Specially for the Latter Two). George E. Middleton, of Counsel.

To Leon Edelson, Esq., Attorney for Charles B. Gray, 1505 Land Title Building, Philadelphia, Pa.

Services of the above notice and receipt of a copy acknowledged this ninth day of October, 1931.

(Sgd.) Leon Edelson, Attorney for Charles B. Gray.

[fol. 27] IN UNITED STATES DISTRICT COURT

PLEA OF DEFENDANT, EASTMAN KODAK COMPANY (OF NEW JERSEY), TO STATEMENT OF CLAIM AS AMENDED—Filed February 19, 1931

Defendant, Eastman Kodak Company (of New Jersey), pleads not guilty, with notice of special matters. Defendant also pleads to the jurisdiction of the Court that it has no regular and established place of business in said district.

(Sgd.) Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York City; Ballard, Spahr, Andrews & Ingersoll, 1035 Land Title Bldg., Phila., Pa., Attorneys for Eastman Kodak Company (of New Jersey) Specially for the Purpose of Said Plea.

[fol. 28] IN UNITED STATES DISTRICT COURT

PLEA OF DEFENDANT, EASTMAN KODAK COMPANY (OF NEW YORK) TO STATEMENT OF CLAIM AS AMENDED—Filed Feb. 19, 1931

Defendant, Eastman Kodak Company (of New York), pleads not guilty, with notice of special matters. Defendant also pleads to the jurisdiction of the Court that it has no regular and established place of business in said district.

Pennie, Davis, Marvin & Edmonds, 165 Broadway, New York City; Ballard, Spahr, Andrews & Ingersoll, 1035 Land Title Bldg., Phila., Pa., Attorneys for Eastman Kodak Company (of New York) Specially for the Purpose of Said Plea.

[fol. 29] IN UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF PENNSYLVANIA, MARCH TERM, 1930

No. 15,306

Action at Law for Infringement of Patent No. 1,314,867

CHARLES B. GRAY, Plaintiff,

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY (OF NEW YORK) and EASTMAN KODAK STORES, INC., Defendants

Bill of Exceptions—Filed August 2, 1932

Be it remembered, That in the said term of this court came the said plaintiff into the said court, and impleaded the said defendants in a certain plea of trespass, etc., in which the said plaintiff declared (prout narr.) and the said defendants pleaded (prout pleas). And thereupon issue was joined between them.

And afterwards, to wit: at a session of said court, held at the district aforesaid, before the Honorable William H. Kirkpatrick, Judge of the said Court, on the seventeenth day of March, 1932, the aforesaid issue between the said parties came to be tried by the Court without a jury upon the record of the same case which had been previously tried before a jury and the Court the tenth to fourteenth days

inclusive of December, 1931, the issue between the said [fol. 30] parties having been tried by the Court without a jury on said seventeenth day of March, 1932, in accordance with a stipulation entered into by and between the attorneys for the respective parties, at which date, namely March 17, 1932, came as well the said plaintiff as the said defendants by their respective attorneys; and upon the trial the counsel for the respective parties offered their evidence as particularly set forth in the following stenographic notes of testimony and the stenographer's minutes attached hereto; and the evidence in the cause being closed the learned Trial Judge rendered his opinion and decision, in writing, as hereinafter set forth and as follows:

[fol. 31] PROCEEDINGS AT TRIAL

[Title omitted]

Before Dickinson, J., and a jury

Philadelphia, Pa., December 10, 1931.

APPEARANCES

Present: Thomas Raeburn White, Esq., Algernon R. Clapp, Esq., Leon Edelson, Esq., for plaintiff; William H. Davis, Esq., George E. Middleton, Esq., Boyd Lee Spahr, Esq., and Charles W. Riley, Esq., for defendants.

Mr. Davis: If the Court please, before we go on with the evidence, I am appearing here on behalf of the defendant, the Kodak Stores, and your Honor will recall that the defendants, the Kodak Company of New York, and the Kodak [fol. 32] Company of New Jersey, appeared specially and made a motion to quash the subpœna, and that was passed upon by the Court, and I am petitioning it now only to reserve the point for reconsideration by the Court and for the Court of Appeals.

The Court: Well, you may proceed.

(Mr. White opened for the plaintiffs. Mr. Davis opened for the defendants.)

The Court: Will you let me have a copy of the patent?

(Copy of patent handed to the Court.)

Mr. White: If your Honor please, we rely on Claims 1, 2, 3, 5 and 6.

I offer in evidence certain stipulations which have been agreed upon between counsel for plaintiff and defendants. The first one relates to certain jurisdictional facts.

I offer in evidence stipulation between counsel for plaintiff and defendants as follows:

STIPULATION AS TO CERTAIN FACTS

It is hereby stipulated and agreed:

1. That the plaintiff, Charles B. Gray, is a citizen of the United States and a resident of Millbourne, in the County of Delaware and State of Pennsylvania, and that Eastman Kodak Company is a corporation existing under the laws of the State of New Jersey and that Eastman Kodak Company (of New York) is a corporation existing under the laws of the State of New York.

2. That the plaintiff, Charles B. Gray, is now, and has been since the date of issue of said letters patent in suit, No. 1,314,867, the sole owner of said letters patent and of any and all claims for damages arising out of any and all infringements of said letters patent.

3. That at the trial of the above-entitled cause printed Patent Office copies or photostats of United States patents and printed or photostat copies of foreign patents may [fol. 33] be introduced and shall be received in evidence with the same force and effect as original letters patent or duly certified copies thereof, and that photostat copies of publications may be introduced and shall be received in evidence with the same force and effect as the originals, and that such publications were published on the respective dates they bear purporting to be the date of publication; all subject to correction by other proof.

4. That at the trial of the above-entitled cause plaintiff will rely upon Claims 1, 2, 3, 5 and 6 of the patent in suit, No. 1,314,867, and upon any other claim or claims provided plaintiff gives due notice thereof to defendant at least thirty days before trial.

5. That the defendant, Eastman Kodak Company (of New York) has manufactured and sold within the United States and within six years of the filing of the amended statement of claim herein cable releases like the samples attached to the stipulation of February 17, 1931, between attorneys for plaintiff and attorneys for Eastman Kodak Stores, Inc., and respectively identified as "Kodak Releases, types No. 2 and No. 26"; that in proof of infringement at the trial plaintiff will rely upon either or both of said type No. 2 and type No. 26 releases; and that if other releases are to be relied upon plaintiff will give defendant notice of such other releases and clearly identify them, at least thirty days before trial.

6. That the notices of special matters of defense given in writing by defendant, Eastman Kodak Stores, Inc., to plaintiff's attorney on September 9, 1930, and January 29, 1931, be considered as having been given likewise by defendants, Eastman Kodak Company and Eastman Kodak Company (of New York).

[fol. 34] I also offer a second stipulation, including somewhat the same averments as the first, and with certain other technical averments:

STIPULATION AS TO CERTAIN FACTS

It is hereby stipulated and agreed:

1. That the plaintiff, Charles B. Gray, is a citizen of the United States and a resident of Millbourne, in the County of Delaware and State of Pennsylvania, and that Eastman Kodak Stores, Inc., is a corporation existing under the laws of the State of New Jersey having a regular and established place of business in the City of Philadelphia and State of Pennsylvania.

2. That the plaintiff, Charles B. Gray, is now, and has been since the date of issue of said letters patent in suit, No. 1,314,867, the sole owner of said letters patent and of any and all claims for damages arising out of any and all infringements of said letters patent.

3. That at the trial of the above-entitled cause printed Patent Office copies or photostats of United States patents and printed or photostat copies of foreign patents may be

introduced and shall be received in evidence with the same force and effect as original letters patent or duly certified copies thereof, and that photostat copies of publications may be introduced and shall be received in evidence with the same force and effect as the originals, and that such publications were published on the respective dates they bear purporting to be the date of publication; all subject to correction by other proof.

4. That at the trial of the above-entitled cause plaintiff will rely upon Claims 1, 2, 3, 5 and 6 of the patent in suit, No. 1,314,867, and upon any other claim or claims provided plaintiff gives due notice thereof to defendant at least thirty days before trial.

[fol. 35] 5. That defendant, Eastman Kodak Stores, Inc., has sold in the Eastern District of Pennsylvania and within six years of the filing of the original statement of claim herein, cable releases like the samples attached hereto and respectively identified as Kodak releases types No. 2 and No. 26; that in proof of infringement at the trial plaintiff will rely upon either or both of said type No. 2 and type No. 26 releases; and that if other releases are to be relied upon plaintiff will give defendant notice of such other releases and clearly identify them, at least thirty days before trial.

I also offer in evidence the notice and supplemental notice given by the plaintiff to counsel for the defendants in connection with this case.

NOTICE AS TO RELEASES RELIED UPON

In accordance with the provisions of paragraph 5 of the stipulation executed February 17, 1931, and paragraph 5 of the stipulation executed October 3, 1931, by the attorneys for the plaintiff and the attorneys for the defendants in the above-entitled cause, notice is hereby given to each and all of said defendants that the plaintiff, in proof of infringement, at the trial will rely, in addition to the cable releases of the types identified in the aforesaid stipulations, upon a further cable release manufactured and sold by the defendants like the sample attached hereto and identified as "Kodak Release, type No. 29."

Leon Edelson, Attorney for Charles B. Gray, Plaintiff.

Dated October 6, 1931.

Service of the above notice is hereby acknowledged this tenth day of October, 1931.

Pennie, Davis, Marvin & Edmonds, Attorneys for Defendants.

[fol. 36] SUPPLEMENTAL NOTICE AS TO RELEASES RELIED UPON

In accordance with the provisions of paragraph 5 of the stipulation executed February 17, 1931, and paragraph 5 of the stipulation executed October 3, 1931, notice is hereby given to each and all of the above-named defendants in the above-entitled cause that the plaintiff, in proof of infringement, at the trial will rely upon all cable releases manufactured and/or sold by the defendants in which the inner thrust member is in the form of an incompressible spiral coil surrounded by an outer spiral coil the convolutions of which are open or in spaced relation and in which said outer coil is held in partially compressed condition by means of a substantially inextensible outer jacket of fabric material.

This supplemental notice is given in view of the fact that the defendants have manufactured and sold and are now manufacturing and selling cable releases embodying the constructional features set forth above and which are identified by type numbers other than those particularly specified in the aforesaid stipulations respectively executed February 17, 1931, and October 3, 1931.

Leon Edelson, Attorney for Charles B. Gray.

Dated October 23, 1931.

To Pennie, Davis, Marvin & Edmonds, Attorneys for the above-named defendants, 165 Broadway, New York, N. Y.

Service of the above notice and receipt of a copy thereof acknowledged this twenty-fourth day of October, 1931.

Pennie, Davis, Marvin & Edmonds, Attorneys for Defendants.

[fol. 37] CHARLES B. GRAY, sworn.

Direct examination.

By Mr. White:

Q. 1. Mr. Gray, where do you reside?

A. Millbourne, Delaware County, Pennsylvania.

Q. 2. What is your profession or business?

A. Experimental engineer and developing, manufacturing, some of my own inventions now.

Q. 3. You have been engaged in that professional work how long?

A. Well, for around twenty years.

Q. 4. You have made and manufactured a number of inventions?

A. I have manufactured a number of inventions, or at least one that is sold.

Mr. Davis: I object.

Mr. White: I do not know what he was going to say. I haven't asked him any question.

By Mr. White:

Q. 5. Mr. Gray, I show you letters patent.

The Court: What are you going to have him do? Describe his invention?

Mr. White: Yes.

The Court: Then suppose you let the jury have as many copies as you have of the patent, so that they can follow.

Mr. White: I will offer in evidence now, pursuant to the stipulation, a printed copy of the patent, Letters Patent No. 1,314,867, and I will hand the other two copies, which is all I have, to the jury, in case they wish to follow Mr. Gray's testimony.

(Printed copy of Letters Patent No. 1,314,867, marked as Plaintiff's Exhibit No. 1.)

[fol. 38] By Mr. White:

Q. 6. Mr. Gray, do you want to have a copy of the patent before you when you describe your invention?

A. Well, it is hardly necessary.

Q. 7. Suppose you tell the jury now what this invention of yours was and how it differed from other similar devices then in use.

Mr. Davis: I object to that, if the Court please. It seems to me that the patent itself shows that. It is not suggested that there is any obscurity in the patent or terms of the art that need explanation.

The Court: Do you lay down as a general proposition that these patents are self-displaying?

Mr. Davis: Certainly, in this case, I think there is no doubt that the patent explains itself, and, quite aside from the question whether it does or not, it seems to me that to call the inventor to state what his invention was and how it differed from other things, I feel quite sure, if your Honor please, that there is no question but what anyone can read this patent, anyone at all familiar with springs and wires can read this patent and understand what it explains there. I am sure the Court can.

Mr. White: Well, it may be very plain to Mr. Davis, who is a distinguished patent lawyer, and to the Court, who is familiar in such matters; but it is very hard for me to understand it, and ordinary people like the jury and myself, it is very difficult, I think, and it would really be helpful if Mr. Gray would explain in simple language what his invention is.

[fol. 39] The Court: Are you after a ruling?

Mr. Davis: Yes, sir; please.

(Question repeated by the stenographer.)

(Objection overruled. Exception noted for the defendants by direction of the Court.)

The Court: With the qualification, Mr. White, that you must restrict the witness not to what his invention was, but what his patented invention was.

By Mr. White:

Q. 8. Now understand, Mr. Gray, in describing your invention, you are describing what is covered by your letters patent which have just been offered in evidence. Do you understand what I mean?

A. Without the difference between the two?

Q. 9. No. That will come later. But just tell us what your invention was as described in this paper that has just been offered in evidence.

The Court: You invented something, and you patented it. Now we want you to tell the jury in as plain and simple language as you can what the invention is which you patented and which is described in your letters patent.

The Witness: The cable release which I perfected and invented consists of two heads, one hand piece and one attached to the camera, and between those two heads is a spring surrounded by a jacket, which limits those two heads at a certain distance apart, and holds them there, and inside of that head is a coil spring openly wound, so that it will, when it is bent this way or caught in the lid of the camera, while opening or closing—closing anyway—that it will spring—these springs will close when it is bent for any reason, these springs will close in instead of being bound.

[fol. 40] By Mr. White:

Q. 10. Do you wish to use these springs I hand you for illustration to the jury?

A. Yes. This fabric here represents the fabric which binds—that is around—this is only a section—that goes entirely around the spring. To make a flexible—this spring then is inside underneath this fabric. Here is the thing that limits the two heads at a given distance apart. Well, when this is bent, you see it closes up, it has room enough between the coils to close up on the inside. You see it closes up on the inside and opens on the outside, or remains the same distance on the outside, but closes on the inside; but that leaves the structure flexible. Then inside of this is another flexible coil for a thrust pin, which is free at one end and is bendable. It is a tightly wound coil. A tightly wound coil is flexible as long as one end is loose and not bound. As soon as it is bound it becomes stiff, like that. But this inner coil is flexible. It is a closely wound coil. But one end not being bound, remains flexible, and it can be bent. So, the entire mechanism can be bent in various directions without moving the camera in operation or injuring the inner or outer spring members for operation. In other words, if this inner member or the outer member becomes cramped——

The Court: Mr. White, if you will approach this subject from a different angle, I think you will be able to make it clearer to those of us who are not trained engineers, or mechanics. Now, suppose he tells us the state of the prior art upon which he thinks his invention was an improvement, and then ask him to explain wherein and how his improvement acted, and I think we will get it better.

Mr. White: Exactly.

[fol. 41] By Mr. White:

Q. 11. Mr. Gray, what did you start with in the form of a cable release then in use, when you began to make your experiments here?

The Court: Now, the prior art, that is what he is asking about. What was the prior art upon which you claim your invention was an improvement?

The Witness: May I have those samples?

Mr. White: You mean the ones you worked with?

The Witness: No; the ones that were in use at the time I made these improvements.

Mr. White: You mean these old ones that you had at that time?

The Witness: Yes, the old ones, the one with the wire. Now, here is a cable release that was in use at the time I invented and patented this flexible release.

By Mr. White:

Q. 12. You say it was in use. By what company was it manufactured?

A. It was manufactured by the Eastman Kodak Company. At least, it is marked that way.

Q. 13. You took that from an Eastman Kodak camera?

A. This is taken from one that had been used on a camera.

The Court: We are not interested in that, are we?

Mr. White: Except that it shows what he starts with.

The Court: No; we are inquiring about the prior art. Something was done in a certain way. This man made [fol. 42] what he thought was an improvement on it. Now, I think this jury will get a clearer idea if you tell them what was used beforehand and wherein he thinks his application is an improvement on the art.

Mr. White: I will ask *his* him to describe the structure of the cable release which I now offer in evidence.

(Cable release offered in evidence by Mr. White, labelled "EK used by Gray in early experiments. Closed coil casing and wire cable," designated as Plaintiff's Exhibit No. 2.)

The Court: He is talking about what he calls a cable. This is an improvement in the mechanism of a camera, is it?

Mr. White: That is right.

The Court: We all have some idea of what a camera is. What is that used for in a camera? What you call a cable? What is its use?

The Witness: This cable release takes the place of the old rubber tube and bulb. That is what it was to take the place of.

By Mr. White:

Q. 14. What is its purpose?

A. For opening and closing the lens and exposing the picture, exposing a film.

By the Court:

Q. 15. Let us see if we get that straight. That is under the mechanism of the original camera, when a man wanted to take a picture or stop taking a picture, he pressed the bulb; is that the idea?

A. When he wanted to expose a picture, he would press the bulb.

[fol. 43] Q. 16. What I mean to say is this: He is carrying his camera along, it is not taking any pictures; now, he sets it and sights an object, a picture of which he wants to take; now, in order to get what they call an exposure, he would press the bulb; is that the idea?

A. He presses a bulb, prior to this.

Q. 17. I am talking about in the first place.

A. Yes.

Q. 18. And I suppose that was pneumatic, was it, in its operation?

A. It was pneumatic.

Q. 19. All right; then there came a change, and instead of using a bulb and an air tube, he used what you call a cable?

A. A cable release.

Q. 20. And that is what you have in your hand?

A. That is what I have in my hand.

Q. 21. How does that operate differently from what the old squeezing of the bulb operated?

A. Well, it has two heads and a fabric and a closed spring, and then a wire cable for the plunger, running through that, and when that is pressed, that operates the lever on the camera, or the shutter of the camera, as did the pneumatic arrangement.

Q. 22. Well, now, tell me, is that operation mechanical or do you have a dry battery or something there? Is it electrical?

A. It is entirely mechanical.

Q. 23. Entirely mechanical?

A. Yes.

Q. 24. In other words, you really push open or shut or move your lever, which opens or shuts, is that it?

A. Well, when it is operated, it is supposed——

Mr. White: Referring to what?

The Court: Referring to the prior art.

[fol. 44] Mr. White: Plaintiff's Exhibit No. 2.

The Witness: When this operated to open or close the lens, open and close the lens, it is supposed to go forward and do that, and when you release it here it is supposed to come back. I found in this release that a slight kink in the outer coil or a slight kink in this would make it go forward and stay put, and the next operation that you wanted to make, why this was in that position, and you got no picture, you got no exposure, or if it was a time exposure, this thing would just stay up and keep the lens open. A camera is marked with different openings, time, bulb, and instantaneous. If it is instantaneous, it will go back, it will open and shut immediately with one operation. But if this thing is out of commission, which was the case at that time, it would go up and stay up, and the next exposure you undertook to make, this did not operate.

By the Court:

Q. 25. Mr Gray, really that acted as a sort of a plunger, did it?

A. Yes; it is a plunger.

Q. 26. Now, in order to act as a plunger, it had to have certain rigidity?

A. Yes.

Q. 27. It would have to have some rigidity or you could not push it?

A. Well, it slides—it is guided in this.

Q. 28. I understand, it would have to have. If it would double up the minute you put pressure on it, it would not slide, and it would not act as a plunger.

A. No, but then——

Q. 29. Now, the idea was that when you plunged it, the moment you released your pressure it would come back to its original position?

[fol. 45] A. It would come back.

Q. 30. If it worked as it was expected to work?

A. As it was expected to work.

Q. 31. But if it got a kink in it or anything else that would prevent that from acting as the plunger, then it would not come back immediately?

A. That is right.

Q. 32. And when it did not come back, the glass, we will call it, would remain exposed to the light?

A. Exposed to the light, or the next time you wanted to operate it, depending on which way you were using the camera, this would not open the lens, it would be stuck.

Q. 33. I think we have that clear. Now, wherein did your invention change that in what you thought was an improvement?

A. My invention consists of an open coil under this jacket which allows bending—can I have one of those, one of my releases? This invention here consists of an open coil on the outside and another spiral coil, a smaller spiral coil for the thrust member on the inside. When that is bent, you see it will go back to its normal position. You bend this the same way, and it stays bent. That is what stopped the working of this release.

Q. 34. Well, now, let us see if we understand that. Do you mean you put one coil inside another, so you had really two instead of one?

A. Two coils, yes.

Q. 35. Is that the idea?

A. Yes; two coils instead of a wire.

Q. 36. All right. We understand that.

A. And then this outer coil is spaced all along in one or two places, so that when it is bent it will go together inside of this——

[fol. 46] By Mr. White:

Q. 37. Illustrate to the Court by that larger spring.

A. Well, here is one—this is the jacket here, and this represents this section of the jacket. Well, when this is bent here, you see it does not bend, because it is bound between these two ends. You take this. This is my release. This is what was in the release in the prior art. This is what I found to work. You see, it is spaced coils with the same fabric over it, a section of the fabric, and that can be bent as freely as you want to.

By the Court:

Q. 38. Let us see if we get that, Mr. Gray. Then the difference between your spring coil and the spring coil of the prior art was that the convolutions of the coil were further apart in your application than in the other, is that it?

A. That is it.

Q. 39. All right; now we have that.

A. That enabled you——

Q. 40. Well, we can understand how it would affect the flexibility and resiliency of the coil; but that is the essential thing, that the convolutions were further apart in your idea than they were in the idea of the old art?

A. Well, the next—it is a combination of two things.

Q. 41. I understand, but that was one element?

A. That is one element.

By Mr. White:

Q. 42. Now what was the other element?

A. The other element was this coiled spring on the inside.

The Court: He has mentioned that, one element was really to have one coil within another coil.

[fol. 47] The Witness: Yes; inside of this cable. This cable will kink where the coil spring won't.

By Mr. White:

Q. 43. Mr. Gray, have you got one of your own releases there?

A. Yes.

Q. 44. What is this?

A. That is one of the prior art.

Mr. White: I offer in evidence cable release identified by the witness as "Old Eastman Kodak closed casing and wire cable."

(Cable release offered in evidence by Mr. White, designated as Plaintiff's Exhibit No. 3.)

The Court: Mr. White, may I ask you whether this coil within a coil is the same thing as described in claim 6, as a combination of two heads? Does that mean the same thing?

Mr. White: The combination of two heads is the two ends of the flexible tube.

The Court: That merely means the two ends then, does it?

Mr. White: Yes, that is it.

By Mr. White:

Q. 45. I understand, Mr. Gray, that you have explained the distinction between your invention and the prior art was that in your invention you had an open spring casing?

A. Yes, sir.

Q. 46. And the other was a closed spring casing with a wire intervening?

A. With a wire intervening. With a wire——

Q. 47. Plunger?

[fol. 48] A. Plunger.

Q. 48. Or an open spring casing with a wire plunger, did that exist in the prior art?

A. I didn't get that.

Q. 49. Did you find in the prior art an open spring casing but with a wire plunger?

A. I did.

Q. 50. You did?

A. Yes.

Q. 51. But not the combination of an open spring casing with a closed inner spring for a thrust member?

A. No, I didn't find that in the art.

Q. 52. That is correct, is it?

A. Yes.

Q. 53. Now, Mr. Gray, while your claims were going through the Patent Office, what if anything did you do with your invention in connection with the Eastman Kodak Company?

A. Well, I sent, through a friend of mine——

Mr. Davis: May I interrupt? I object. I do not see the purpose of that.

The Court: Nor I. State what you propose to prove.

Mr. White: I propose to prove that a sample of Mr. Gray's invention was sent to the Eastman Kodak Company, examined by them——

The Court: Before his patent was issued?

Mr. White: While his patent was being——

The Court: Before it was issued?

Mr. White: Before it was issued. And that after his patent was issued he went to them again and asked for proper consideration of his rights, which was refused.

[fol. 49] The Court: I do not know what you mean by proper consideration of his rights. I can understand that he disclosed to them what he claims his invention was. That may have some bearing on the question of infringement.

Mr. White: Yes, sir; and then he afterwards notified them that he considered they were infringing his patent, after it was granted. I am going to follow it up by proving that, but it seems to me very material to show that——

The Court: I grant you that you may show that there was a disclosure made to the one who is charged with infringement, of what the invention was. That may have a bearing, and a very important bearing, upon the question of whether or not they used that information.

Mr. White: That is it exactly.

The Court: And that would be infringement, if the patent was valid. I will permit that. Is it limited to that?

Mr. White: That is all at the moment, yes.

The Court: All right; I will permit that. I think that is proper.

Mr. Davis: May I say this, that Mr. White says that they subsequently sent a notice——

The Court: Well, I asked him now whether it was limited to the communicating of the essence of the invention to the alleged infringer. I think that may have some bearing on

the question of infringement. But beyond that I do not see that it has any relevancy. So go ahead.

Mr. Davis: I will withdraw the objection.

[fol. 50] Mr. White: I ask counsel for the other side if they will produce a letter from Joseph Knaffl to H. M. Fell, dated June 21, 1918.

Mr. Davis: Yes, sir, we have it here, and we will produce it. Do you want to go right ahead with your copy?

The Court: They say you may go ahead and use your copy. The letter will be produced.

By Mr. White:

Q. 54. Who is Joseph Knaffl, Mr. Gray?

A. He is a photographer in Knoxville, Tennessee.

Q. 55. He was a friend of yours?

A. A friend of mine.

Q. 56. You were living at Knoxville at that time?

A. Yes.

Mr. White: I offer in evidence letter from Joseph Knaffl to H. M. Fell, of the Eastman Kodak Company, at Rochester, New York, dated June 21, 1918.

(The letter referred to was marked as Plaintiff's Exhibit No. 4, and was read to the jury by Mr. White. It is copied into the record at page 89 stenographic Notes of Testimony.)

Mr. Davis: If the Court please I move to strike that out, because it does not disclose how Mr. Gray's device was made——

The Court: Oh, but I assume that is a mere step.

Mr. White: That is a mere step, yes.

Mr. Davis: You put it in as preliminary to what will come later?

Mr. White: Yes, that is all. I now offer in evidence the reply to the letter last mentioned.

[fol. 51] (Letter referred to designated as Plaintiff's Exhibit No. 5. Read to the jury by Mr. White. It is copied into the record at page 90, stenographic Notes of Testimony.)

The Court: Was that before or after the issuance of the patent?

Mr. White: Before the issuance, but while it was being considered by the Patent Office.

The Court: Evidently the writer of the letter thought that the patent had been issued.

Mr. White: He perhaps did. I call for a letter to Mr. Fell from Mr. Knafft of July 2, 1918.

(Letter produced in answer to the call.)

Mr. White: This is dated 7/2/18, to Mr. H. M. Fell, care of Eastman Kodak Company, Rochester, New York. I offer it in evidence.

(Letter referred to designated as Plaintiff's Exhibit No. 6. Read to the jury by Mr. White. It is copied into the record at page 91, stenographic Notes of Testimony.)

By Mr. White:

Q. 57. Mr. Gray, did you send a cable release as stated in that letter?

A. We did, through Mr. Knafft.

Q. 58. One of your inventions?

A. Yes.

Mr. White: I offer in evidence letter from the Eastman Kodak Company, by F. W. Lovejoy, dated July 10, 1918.

(Letter referred to designated as Plaintiff's Exhibit No. 7. Read to the jury by Mr. White. It is copied into the record at page 91, stenographic Notes of Testimony.)

By Mr. White:

Q. 59. Have you got the box in which the cable release was sent back to you?

[fol. 52] A. That was sent to Mr. Knafft.

(Box produced by the witness.)

By Mr. White:

Q. 60. And does that box contain the cable release which they returned to you and also the one which they sent you?

A. It does.

Q. 61. Has it been in your possession ever since it was received?

A. It has.

Q. 62. I show you a cable release taken from this box and which appears to have had the cover removed from a portion of it. What cable release is that?

A. That is the one that I sent through Mr. Knaffl.

Q. 63. That is the one you sent?

A. Yes.

Q. 64. What condition was it in when you sent it?

A. Well, it was as it is, except that the cover was not separated.

Q. 65. In other words, the cover was taken off by them in order to examine it?

A. The cover was evidently slitted to see what was in the inside, to see the construction.

Q. 66. Now I show you also the other release contained in this box and ask you if that is the one that was sent you by the company at that time.

A. It is.

Q. 67. And which Mr. Lovejoy stated was identical or substantially so with yours?

A. It is the same one.

Q. 68. Will you explain the structure of that cable release and explain to the jury whether it is like yours?

A. Well, this cable release has some of the same elements in it that mine does, but it still has this stiffness, and it has the closed spring on the outside under this jacket. It has the same coil spring in the inside as mine for the thrust member.

[fol. 53] Q. 69. In other words, it has a closed coil spring on the outside?

A. A closed coil spring on the outside and a closed coil spring on the inside for a thrust bearing.

Q. 70. How does yours differ from that?

A. Mine differs from this in that it has a closed coil spring on the outside. When it is bent——

Q. 71. You mean open?

A. Open coil spring on the outside. When it is bent it will—shall I bend this completely?

Q. 72. Whatever you like.

A. Now you see that is—when that is bent like mine will bend it is out of—it is distorted here, and it gets a little more of that and you can't use it at all. Could I take that one of mine again?

Q. 73. Yes.

A. The one that is being manufactured.

Q. 74. Oh, you mean the one they are making now?
A. The one they are making.

The Court: Do I understand the witness to go so far as to say that the difference between what we will call the Eastman coil which was sent to him and his coil that he sent to the Eastman Company consisted in the fact that the outside coil, the convolutions of the outside coil, were further apart than they were on the inside coil and than they were on the Eastman coil, so that they would be more flexible and bend without injury to the bar or whatever you call it?

Mr. White: That is nearly right, but I might just correct it by saying that the outside coil on the Eastman cable release is not open at all, it is what we call a closed spring. The convolutions are closed; that is correct?

The Witness: That is why that is offset.

[fol. 54] By the Court:

Q. 75. But what I want to get is, Mr. Gray, do we understand you correctly that that is the only difference, essentially, of course?

A. That is the only difference.

Q. 76. That is the only difference?

A. The only difference. That permits, if the coils are bent, these coils will come together on the inside, they will come together on the inside and you do not have this stiffness.

Q. 77. We understand what the advantage of it is, but if, for the Eastman outside coil there had been substituted one of your type of coils with the convolutions further apart, then yours and theirs would have been the same, is that it?

A. Would have been the same.

By Mr. White:

Q. 78. Now, you said you wanted to see one of the new Eastman releases which are exactly like yours.

A. I just want to illustrate the difference, what will happen if you bend mine closely, and what happens to this one. You see this one has no permanent set to it. This one I can show you again.

Mr. Davis: You better identify what this one is.

The Witness: The one that the Eastman Kodak sent me, saying that it was similar to mine. Now, I am bending that again. You see it is resistant now. It has got two kinks in it.. Try this in another place.

By Mr. White:

Q. 79. Now, the other that you have in your hand is an Eastman Kodak cable release as now manufactured, and which you claim to be an infringing device?

[fol. 55] A. Yes; this is my release manufactured by the Eastman Kodak Company. Now that is bent the same way.

Q. 80. And it does not leave the kink?

A. It doesn't leave a kink to obstruct the working of the camera.

Q. 81. That is the one that came back to you, isn't it?

A. Yes, that is the one that came back to me, the one that is kinked.

Q. 82. What is this newspaper piece in here? Has that got anything to do with it?

A. Let me see it.

Mr. White: No; that has nothing to do with it. I offer in evidence the box received by mail by Mr. Knafft, addressed to Mr. Knafft from the Eastman Kodak Company, with the two releases contained therein as stated by the witness, one the release which he sent to that company and the other the cable release which they then sent to him.

(Box referred to, with contents, marked as Plaintiff's Exhibit No. 8.)

By Mr. White:

Q. 83. Now, Mr. Gray, when did you discover that the Eastman Kodak Company had again changed their method, their type of cable release, and were using the type disclosed by you in your patent?

A. Well, it was a year or more after, to the best of my recollection, it was a year or more after I had sent this sample to them.

Q. 84. How did you ascertain it?

The Court: Mr. White, will you give me the date of that correspondence?

Mr. White: The first letter was June 21, 1918.

[fol. 56] The Court: Then that was after your patent application?

Mr. White: Yes.

The Court: But before the patent was granted?

Mr. White: That is right.

(Question repeated by the stenographer.)

The Witness: Will you state that again?

By Mr. White:

Q. 85. How did you find out that they were using your type of cable release?

A. I could purchase it from the dealers.

Q. 86. Purchased an Eastman Kodak camera?

A. From the dealers.

Q. 87. And examined the release?

A. I could purchase those and replace them on the camera.

By the Court:

Q. 88. Now, Mr. Gray, several times we have reminded you that it is important not only that you testify but it is equally important that the jury hear your testimony. They cannot hear you.

A. May I repeat that then? I could purchase these from the dealers in my part of the country. That is where I was located at that time. That is where I discovered that my release was being used.

By Mr. White:

Q. 89. How was the release that you then purchased, say a year or two—you don't remember the exact date—after this exchange of letters, and the release manufactured and sold by the defendants at the present day, which are the same, as I understand it—what was their structure? How did it compare with yours?

[fol. 57] A. Please state that again. I didn't get it.

Q. 90. Describe the structure of the release now manufactured by defendant company, as per sample which I now show you.

The Court: That is the alleged infringing structure, I assume?

Mr. White: Yes, the infringing structure.

The Court: All right. Tell the jury what that is.

Mr. White: That is Eastman Kodak No. 2 release.

The Witness: This release is what is contained in my patent, with an open outer coil and a closed inner coil, which gives it a flexibility and keeps it from kinking. You will note that this inner coil here, this closed coil, is free at one end, which will always leave it—I mean it is not bound in any way at one end, which leaves it flexible. The closed coil is flexible until you bind it between two ends. Well, this release here has the open coils like that, and when they are bent, they can slide inside the fabric casing, and that makes it flexible, leaves it flexible, whereas if it is bound between these two heads, as this section fabric is, when you undertake to bend it, it is stiffened.

By Mr. White:

Q. 91. The cable release which you hold in your hand is the one which is known as No. 2, is it not, by the defendant company?

A. Yes.

Q. 92. Stamped on the end?

A. Stamped on the end.

Mr. White: I will offer this in evidence as part of the witness's testimony.

[fol. 58] (Cable release referred to designated as Plaintiff's Exhibit No. 9, labeled "EK No. 2, infringing Gray's patent.")

By Mr. White:

Q. 93. Is that the same structure which you observed when you first discovered that——

A. That is the same structure, yes.

Q. 94—discovered that they were infringing?

A. Yes.

Q. 95. Now, Mr. Gray, your patent was granted on December 2, 1919. Did you take up with the defendant company, did you notify them that they were infringing on your rights?

A. Yes.

Q. 96. First through Mr. Knafft?

Mr. Davis: Does it make any difference?

Mr. White: No, it doesn't make any difference. I just wanted to clear it up.

Counsel for defendants produce a letter by an attorney at Knoxville, Cyrus Kerr. Was he representing you at that time?

The Witness: He was representing me, yes.

Mr. White: I offer this in evidence.

(Letter from Cyrus Kerr to Eastman Kodak Company dated Knoxville, Tennessee, September 26, 1919, designated as Plaintiff's Exhibit No. 10. Read to the jury by Mr. White. It is copied into the record at page 93, stenographic Notes of Testimony.).

Mr. White: I offer in evidence the answer of the patent attorney representing the Eastman Kodak Company, October 6, 1919, addressed to Mr. Cyrus Kerr, 607 Empire Building, Knoxville, Tennessee.

[fol. 59] (Letter referred to designated as Plaintiff's Exhibit No. 11. Read to the jury by Mr. White. Copied into the record at page 94, stenographic Notes of Testimony.)

Mr. White: I offer in evidence a letter from F. W. Lovejoy, vice-president of the Eastman Kodak Company, Rochester, New York, December 2, 1919, to Mr. Joseph Knaffl.

(Letter referred to designated as Plaintiff's Exhibit No. 12. Read to the jury by Mr. White. Copies into the record at page 98, stenographic Notes of Testimony.)

By Mr. White:

Q. 97. Mr. Gray, having received that letter, did you call in person at the office of the Eastman Kodak Company and discuss this matter with them?

A. I did.

Q. 98. About when was that?

A. It was in 1923.

Q. 99. You at that time notified them that they were infringing your patent?

A. I notified them that they were infringing the patent.

Q. 100. You received a letter a few days after your visit from the Eastman Kodak Company, did you not?

A. Yes, I received a letter.

Mr. White: I offer in evidence letter from the Eastman Kodak Company, A. K. Chapman, dated October 31, 1923, addressed to Mr. C. B. Gray, Box 596, Philadelphia, Pa.

(Letter referred to designated as Plaintiff's Exhibit No. 13. Read to the jury by Mr. White. Copied into the record at page 98, stenographic Notes of Testimony.)

[fol. 60] By Mr. White:

Q. 101. Mr. Gray, were you informed by the defendant company, or have you at any time seen any combination in the former art like yours?

A. Not before I sent this to them, not before I sent this to the Eastman Kodak Company.

Q. 102. I mean before your invention.

A. No.

Q. 103. They say in this letter that the closed coil outer casing and the open coil outer casing were known to them, and the inner thrust member coil?

A. Well, can I explain why that is?

Q. 104. Yes.

A. They have an open coil spring on the outside, in some of the patents, where they have the wire inner member, wire thrust member. That combination will kink, because the inner member will kink and hold the outer space coil kinked. So, it takes the combination of the two, of the coil spring on the inside and the open coils outside, to make a non-kinkable apparatus.

Q. 105. And that combination they did not claim they had?

A. They did not claim they had.

Mr. Davis: I object to that.

(Last question and answer repeated by the stenographer.)

The Court: That is a construction put on the letter, isn't it?

Mr. White: Well, he saw them personally and talked it over.

The Court: If they specifically denied the former use, prior use of that combination, all right; but your question, I would assume, was nothing more than a construction of their letter.

Mr. White: That is what it really is, yes, sir.

[fol. 61] The Court: Well, I do not think you can construe the letter. I will grant the motion to strike out the last question and answer.

Now, if I were on the jury, I would like to have explained to me why, if one construction of one of these plungers will kink in use because of the consequence of bending it, how you get rid of that by putting a more flexible tube, I will call it, on the outside. You make the same bending, and how does putting another coil with convolutions further apart affect the bending of the inside one?

The Witness: The inside coil is not bound. It is free at one end. It is free at one end and it is like this. Here is a closed coil. That is very flexible, anyway you want to—except when you bind it like this in the cable release. Now here is the construction with the open coil, which is flexible, and the other flexes with it.

Mr. White: Explain why it is flexible.

The Witness: It is flexible because these coils come together.

The Court: That part is clear enough. It is flexible because the coil convolutions are further apart.

The Witness: And they will come together——

The Court: What I have in mind is this. You have a cable of the description given. Now, the difficulty about it is that when it is bent it will kink, and in that way become so disordered as not to operate properly, that is not to operate the camera properly. We can all understand that. We can all understand, I think, easily why you take a cable, a coil, the convolutions of which are further apart, how that will be more flexible and less liable to injury; but how [fol. 62] does the putting of the first one inside the second one affect the operation of the first one? Apparently it would be bent in the same way and operated in the same way, subjected to precisely the same influences. Now why are the results different?

Mr. White: Can you explain that, Mr. Gray?

The Witness: If I understand his question, it is why is it that, by putting a coil spring,—let me get the question right first.

The Court: Let me explain it to you, Mr. Gray. As I gather it,—perhaps I have not the right idea,—now, you have a bar; it is flexible except under one condition, and it

operates all right except that it may get kinked. Now that is your trouble, isn't it?

The Witness: It does get kinked.

The Court: All right; it does get kinked; now, you put that bar inside this flexible coil with convolutions far apart. Now, it is the same bar that you had before, and the only difference is it is inside this coil. Now, why does the putting of it inside that coil make it work differently from what it would work were it not inside it? Does that make it clear to you?

The Witness: I am a little foggy.

The Court: Well, no doubt it is my fault.

Mr. White: Maybe I can ask him a question that will bring that out.

The Court: Suppose you explain it. I will take you for an expert.

Mr. White: I can not take that honor, but I will try to explain it.

[fol. 63] The Court: First I want to know, is it the right idea that in this new invention one of the elements which differentiate it from the old, or one of the improvements that the inventor regards in it, is this element that the bar is inside this more flexible coil? Is that right?

Mr. White: No, that is not quite right, sir. The new element in this is a combination of the open coil outer spring casing and a closed coil inner thrust member. That is the new thing, in that combination. Both of the elements were old. That is to say, an open spring as an outer casing was known, but a wire was put through, and that was not satisfactory, because a wire is not very flexible. Also, a closed coil outer member, such as Mr. Gray illustrated, that was known; and just before he made his invention the Eastman Kodak Company brought out a cable release with an outer closed spring and an inner closed spring, two springs; but the outer was a closed spring. And then the final step in the matter was the combination of the outer open spring with the closed inner spring. Now that is the thing we claim, that combination.

The Court: To my mind it means this. In principle and substance you have a tube with a piston in it.

Mr. White: Yes.

The Court: But you want it to be flexible.

Mr. White: Yes.

The Court: And you construct it accordingly. In the old days it was of rubber, a rubber tube.

Mr. White: Yes.

The Court: Now, there was a difficulty about it; of course, the rubber would degenerate.

[fol. 64] Mr. White: Yes, that is right.

The Court: And somebody substituted these metal bars instead of the rubber tubes. That we can understand. Now, when you got the metal bars, they operated all right except that they might kink in the use.

Mr. White: That is it.

The Court: And when they kinked, that would interfere with the shutter of the camera and play the kind of havoc that we can easily understand it would play. Now, that was its difficulty. In order to obviate that, they put around that closed bar, as you call it, this other more flexible bar. Is that the right idea of what was done?

Mr. White. Yes, that was what was done.

The Court: All right. What I would like to know is how the putting of that closed bar inside another tube, we will call it, affects or changes in any way the results of bending the inside bar.

Mr. White: Well, you see, the inside thrust member itself is a coiled spring, and therefore is flexible, and is not subject to be kinked, as a wire would be.

The Court: Yes.

Mr. White: Now, it must operate through some kind of a tube, and it must operate through a flexible tube, and if you have a tube which is bound by fabric, which is a closed coil spring, it is not flexible enough, and Mr. Gray's contribution to the art was to use the two in combination, to wit, an open coiled spring for the outer or outside of the tube, covered by a fabric, and in the inner side a thrust member consisting of a closed coiled spring, smaller of course, so it would go through.

[fol. 65] The Court: That is perfectly clear to my mind, but it does not answer the question that I have in my mind. Why is it? Let me illustrate it in this way. I have a tube, we will say, of rubber.

Mr. White: Yes.

The Court: And I want it to be flexible, but in flexing it there is danger that it will kink up.

Mr. White: Yes.

The Court: So that it will not operate. That often happens, certainly. Now, I want to stop that, so I get a larger tube and I run the smaller one through the larger one and the smaller one then is encased within a larger one. How does the putting of the kinky tube into the outer tube prevent it from kinking?

Mr. White: If the Court please, this is the reason. I see what you mean. The closed coil spring, when it is used as an inner thrust bearing, is not bound or confined as it is when it has an outer casing. The outer casing is just as Mr. Gray has illustrated here.

The Court: That is what I assume.

Mr. White: Now, when you use it on the inside it is used as a thrust member, but it is not bound, it can move endwise; in fact, its very purpose is to move endwise; therefore when you bend it it is flexible, as this is when bent out like that.

The Court: I assumed that was the explanation, but the net result is that if you do have the two in operation, according to your theory, the net result is that you obviate this tendency to kink with the inner bar.

Mr. White: That is it; and the best evidence of it is that the defendants are using it.

The Court: All right.

[fol. 66] Cross-examination.

By Mr. Davis:

X Q. 106. Mr. Gray, I understand you to say that the release that was sent back to you from the Eastman Kodak Company just after you sent to them your release was exactly like yours except that it had a tightly wound outer casing where yours had a loosely wound outer casing.

A. It is like mine outside of that.

X Q. 107. That is the Eastman device that they sent back to you had the thrust member, as you call it, which was a tightly coiled instead of a straight wire?

A. Yes.

X Q. 108. And I understood you to say also that you knew at that time that releases of this character had been made in which they used a straight wire for the thrust member and a loosely coiled casing around that straight wire?

A. I knew that.

Mr. White: If you wish to explain, you can, Mr. Gray.

The Witness: I wish to explain my answer on the difference between those, the one they sent me and what I sent back. This cable that they sent back,—said was what they were making,—what you saw me double up just now, the outer coil being closely wound, as you see there bent,—kept it permanent set. When they couldn't go no further, this coil is offset like that (indicating). That is what makes a permanent set.

By the Court:

Q. 109. What I understood, Mr. Gray, that the only difference between the release you sent to them and that which they returned to you as the one they had been using—the only difference between the two existed in the fact that the [fol. 67] outside coil had convolutions that were far apart in yours, and in theirs the convolutions were close together.

A. That is the only difference.

By Mr. Davis:

X Q. 110. At that time you knew that other releases had been made with an open coil at the casing?

A. I knew that there was an open coil——

X Q. 111. You just illustrated to the jury how it is that if the outer casing has open coils it can bend easily. You knew at that time that these releases with your open coil casing had been made before you did any work?

A. They all had—the wire cable, stranded wire cable, which was very susceptible to bend—when that bent, it would keep the open coils in a distorted condition.

X Q. 112. That was a defect of the straight wire?

A. That was a defect of the combination.

X Q. 113. The kinking was in the straight wire?

A. In that combination.

X Q. 114. Was the kinking in the straight wire?

A. Where the coils were wound open, it was in the wire.

X Q. 115. Suppose you had a wire inside of the closely coiled casing, as in the earliest of the Camera Company's releases, would those kink?

A. Then both the outer and inner coil would kink.

X Q. 116. This device that the Eastman Company sent back to you, with the close coil thrust member on the in-

side, that thrust member would not kink—that would not kink?

A. Unless the distortion was such—it was carried beyond the ordinary kink, which is possible.

X Q. 117. Do you recall making this application for patent, filing it in the Patent Office?

[fol. 68] A. Yes, sir.

X Q. 118. Do you recall whether or not when you filed that in the Patent Office, you then claimed that your invention consisted of the combination of an open coil outer casing, with a closed coil thrust member?

A. I do.

X Q. 119. Do you recall that the Patent Office said to you at that time that combination was not patentable?

A. I have the patent with that feature.

X Q. 120. Have you any recollection, Mr. Gray, about the Patent Office saying to you that certain claims that you had made in your patent application were not patentable?

A. I have no remembrance of that feature—that principle feature being rejected.

X Q. 121. I am going to ask you, Mr. Gray, to look at this copy of the papers that were filed in the Patent Office, and refer to what is called claim 17. That is one of the claims that you had before the Patent Office as being of your invention at the time the application was filed; is that right?

The Court: That is your original application.

The Witness: I am looking at it to see what I can find.

By Mr. Davis:

X Q. 122. Shall we look at it together, element by element, Mr. Gray?

A. All right.

X Q. 123. It starts out with these words: "In a mechanism of the nature described"—that meant in one of these cable release structures; is that right?

A. That meant my cable release.

X Q. 124. Then the language is: "The combination of two heads." That was the head at one end attached [fol. 69] to the camera, and the head at the other end, that is part of the push button, as you explained this morning?

A. That is right.

X Q. 125. The claim says: "A coiled spring wire tube, having spaced coils, being located between said heads." What member is that?

A. That is the outer coil.

X Q. 126. That is the open coil outer casing?

A. Yes, sir.

X Q. 127. It goes on: "flexible means joining said heads and definitely holding them at a fixed distance from each other until said spring wire tube is partially compressed endwise." What part is that?

A. That is the fabric cover, which this is a section of.

X Q. 128. The claim goes on: "A stem extending slidably through one of said heads, having limited outward movement." What is that?

A. That is the push button here.

X Q. 129. Then the next element is: "A slide member in the other of said heads." What is that slide member—is that the little plunger——

A. The little plunger, the little metal piece on the end of the flexible wire connection.

X Q. 130. That is on the end of the release which is attached to the camera—it is the little plunger on the end of the release that is attached to the camera?

A. At the end; not on the end, but at the end. It is fastened to the inner thrust member.

X Q. 131. The next element in that claim: "Coiled wire tube, means intervening and joined to said stem and said slide member for the transmission of endwise motion on said stem to said slide member," substantially described. What was that final element, "coiled wire tube"?

A. That is the thrust member. That is the connection of the thrust member between the——

[fol. 70] X Q. 132. You answered it, that the coiled wire tube is your coil inside the thrust member?

A. Yes, sir.

X Q. 133. So that you there presented to the Patent Office a claim for a device which had in combination an open wire casing and a coiled wire tube or thrust member?

A. That is right.

X Q. 134. Do you recall that the Patent Office authority, the examiner in the Patent Office who makes examinations

to see whether things claimed there are patentable or not—do you recall that he wrote a letter to you or to your lawyer, in which he rejected that claim and said it was not patentable?

A. I do not recall that. That is in my patent.

X Q. 135. I am going to direct your attention to this document which is a copy of a communication to your attorney from the Patent Office, under date of February 25, 1918. I show you the sentence beginning at the bottom of that page, and I recall to you that the claim that you presented to the Patent Office was claim No. 17. The examiner said to you in that letter: "Claims 17 to 22 inclusive are rejected on the British patent to Edwards cited. To construct the transmission element of a coiled wire tube is not patentable, in view of German to Wermann, 147,572 of June 23, 1904,"—that is the number of the patent. Did you understand when the examiner wrote that letter to you, did you understand what he meant when he said, "to construct the transmission element of the coiled wire tube is not patentable"?

Mr. White: I do not like to object, but I do not see the relevany of this question. It seems to me to be interminable. The Patent Office passed finally on this and the claims were allowed.

The Court: To my mind it is quite important. That is to say, he has testified to what the inventive thought was [fol. 71] in the patent issued to him. He has spoken of certain elements and a combination of certain elements. Counsel is calling his attention to that and asking him whether or not in his original application he did not present as a patentable thought the inventive idea embodied in that combination. He is asking him whether or not he was presenting that very combination to the Patent Office, and as I understand the witness he said, "Yes, I did." Now he is calling his attention to the fact, "Was not that the very combination which the Patent Office threw out as not patentable under the British and German patents"?

Mr. White: What may have happened while the case was going through the office is not material.

The Court: If the Patent Examiner subsequently changed his mind and allowed the claim which he at first rejected, that is a complete answer to it, but counsel may call the at-

tention of the witness to the fact that the Patent Office did at least at first reject that claim.

Mr. White: I have no objection, except I feel it would be interminable.

The Witness: May I answer that?

The Court: Certainly.

The Witness: It is a very common thing to have a claim rejected and finally allowed.

Mr. Davis: I object to that.

The Court: That is a proper answer, but it is not a direct answer. He asked you whether or not you did not understand, first, that you had made an application to the Patent Office for a patent on the very combination which counsel [fol. 72] has described to you, and I understood you to say, "Yes, I did ask for a patent for that very inventive thought"; is that right?

The Witness: Yes, sir.

By the Court:

Q. 136. He asked you, weren't you aware that the examiner in the Patent Office rejected the patentability of that very combination—you were or you were not. You say it is a very common thing for them to reject claims and then afterwards allow them. We will assume that is true. But, did you understand that the examiner had, at least in the first instance, rejected the patentability of that very inventive thought for which you were asking a patent?

A. It is almost impossible to answer that in the way he put it, because a lot of times these claims are changed without my knowledge. Therefore I cannot say I had the knowledge.

Q. 137. Did you have knowledge that there had been cited against you in the Patent Office this British and this German prior patent?

A. I don't remember it, although it is in the record.

(Recess taken until 2 o'clock P. M.)

Afternoon Session

2 o'clock P. M.

CHARLES B. GRAY, resumed.

By Mr. Davis:

X Q. 138. Mr. Gray, I understand you to say that you cannot remember now about this letter from the examiner—what he did say to you—is that right?

[fol. 73] A. There may be some things that I do not remember.

X Q. 139. I understood you to say before lunch that you could not now remember whether the examiner rejected that claim 17, on the ground that it was not patentable—can you remember that now?

A. Sometimes a case is rejected——

X Q. 140. I mean, can you remember now the particular fact whether or not the examiner in your own case did reject claim 17, on the ground that it was unpatentable—can you remember that?

A. I don't recall.

Mr. Davis: I ask that this certified copy of the file wrapper of the Patent Office be marked for identification.

(File wrapper in question marked Defendants' Exhibit No. 1.)

Redirect examination.

By Mr. Edelson:

R. D. Q. 141. Isn't it true that when you first filed your application, you originally submitted some twenty-six claims?

A. Yes, sir.

R. D. Q. 142. And that in the first office action the examiner in charge did allow claims 23 and 24?

A. Yes, sir.

R. D. Q. 143. That these claims 23 and 24 are identical with claims 5 and 6, as they appear in the patent?

A. Yes, sir.

R. D. Q. 144. Didn't the examiner, in his first office action, say: "Attention is directed to the excessive number of claims in this application. Many of them are the same scope and

substantially duplicates. Such practice is directly in contravention of numerous decisions both of this office and by the courts, and serve no purpose other than to impose a [fol. 74] needless burden upon this office, thereby delaying the proper prosecution of the case." Did the examiner say that in the first office action?

A. Yes, sir.

R. D. Q. 145. Subsequently, what did you do. Didn't you amend a number of the claims?

Mr. Davis: Objected to; the paper speaks for itself.

The Court: He has described the structure and called attention to elements in that structure. Counsel called his attention to the file wrapper and asked him whether or not he knew when he was giving that testimony that the Patent Office had rejected his claims, based upon these very elements, which were directed to his knowledge, and that is all that is being elicited now—to tell us what the Patent Office ruled. We can get that from the file paper when it is in evidence. What counsel really is doing is reading the file paper.

By Mr. Edelson:

R. D. Q. 146. In *this* claim- 23 and 24, which were originally submitted, which were allowed by the examiner, in that first Patent Office action, look at this—do not those claims call for two heads, "coil spring wire tube, having spaced coils and being located"——

A. I do not see that.

R. D. Q. 147. Does not claim 23 call for a "coil spring wire tube, having spaced coils, being located between the heads"?

A. It does.

R. D. Q. 148. What is that element in the release?

A. That is the open coil spring.

R. D. Q. 149. That is the outer spring casing?

A Yes, sir.

[fol. 75] R. D. Q. 150. It also calls for "flexible means joining the heads and definitely holding them at a fixed distance from each other, until said spring wire tube is partially compressed endwise."

A. That is the fibre covering around the open coil spring.

R. D. Q. 151. That is the fabric jacket around the spring casing?

A. Yes, sir.

R. D. Q. 152. It calls for a "stem extending slidably through one of the heads, having limited outward movement."

A. That is the plunger.

R. D. Q. 153. That stem is what element?

A. That stem is the hand piece for operating the thrust member.

R. D. Q. 154. Doesn't the claim also recite, "a slide member in the other of the heads"?

A. Yes, sir.

R. D. Q. 155. Doesn't it recite: "A coil wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from the said stem to said slide member"?

A. Yes, sir.

R. D. Q. 156. Doesn't it substantially recite all of the elements that go into your——

A. Yes, sir.

R. D. Q. 157. Do you know whether anywhere during the prosecution of your application there is an admission or concession that the use of the combination of the outer spring casing, having spaced coils and the inside thrust member, having closed coils, are old in the art?

Mr Davis: That is objected to.

The Court: A concession by whom?

Mr. Edelson: By Mr. Gray or his attorney.

[fol. 76] The Court: What difference does that make? He gets a patent and if he is allowed a patent for more than he should be allowed, so that it is invalid, the Court and jury may determine its invalidity, but if he does not get a patent, although he ought to have had one—if he has not one, the jury cannot find that he has a patent unless one was given to him, can he? In other words, a man making the application for a patent may have the real right for the allowance of the patent, for all of the claims, but if the Patent Office does not issue the patent, he has no patent?

Mr. Edelson: That is true.

The Court: What avail is it, one way or the other, an answer to that question?

Mr. Edelson: They are showing that Mr. Gray has cancelled certain claims in his patent. We want to show why those claims were cancelled.

The Court: What difference does that make, why they were cancelled, if they were cancelled? What we are concerned with are the claims which were allowed finally.

Recross-examination.

By Mr. Davis:

R. X Q. 158. Mr. Gray, it has just been called to your attention by Mr. Edelson that in this claim which he read to you, and which is the fifth claim of your patent, that it calls for "a coiled wire tube intervening and adjustably joined to the said stem." In this construction used by the Eastman Kodak Company, is the intermediate thrust member adjustably joined to the stem?

A. It is.

R. X Q. 159. How is that done?

[fol. 77] A. Spiral spring forms a helix, the same as an inner threaded member. They put a prick into this. That goes between or spreads this helix, and I could take that and run it in the same as I can run it out.

R. X Q. 160. That is, you can screw it in and out?

A. Yes, sir; I can run it out. If it is short and does not reach the plunger, I can lengthen it.

R. X Q. 161. I hand you one of these things. Will you please screw it in and out?

(Witness displays the contrivance to the jury.)

The Witness: I am lengthening it out.

By Mr. Davis:

R. X Q. 162. Let us screw it right off.

A. Isn't that screwing it off?

R. X Q. 163. Take it off entirely.

A. It is as adjustable as anything I could make.

R. X Q. 164. You can screw it off just the way you can screw a corkscrew——

A. I mean it is adjustable.

R. X Q. 165. Can you screw it off?

A. Isn't it coming off? I am not through yet. See the distance it is coming. I am taking it clear off now (indicating). There is no impression in this anywhere—simply opens up the coils a little and acts as a thread.

Mr. White: I think, Mr. Davis, you had better identify what you gave to the witness and which he displayed to the jury.

Mr. Davis: It is one of the modern Eastman Kodak releases.

The Court: Will one of the questions in this case be whether or not the mechanism described in some of these claims—I think the first and second—has been anticipated [fol. 78] by the British and German patents?

Mr. Davis: Yes.

The Court: Have you copies of those patents, so that the jury will be able to see them?

Mr. Davis: Yes; it is going to be a little difficult. We have not enough for each juror.

The Court: I think they can follow it.

By Mr. Davis:

R. X Q. 166. You understand, Mr. Gray, that the difference between the claim which the Patent Office rejected and this claim 5 which we have been talking about, and which requires that the joint should be adjusted, was that the rejected claim did not have the adjustable feature, is that right?

A. That was only a minor feature of the machine. It was not rejected on the open coil. It was rejected I believe, on—I forget the name of the patent, where it shows a screw thread—another thread attachment.

R. X Q. 167. The claim which was rejected didn't say anything about the screw threaded connection, is that right?

A. I don't know whether it is this particular patent. It had a screwed end to it——

R. X Q. 168. What I am asking you is—I read to you the 17th claim of your original application, and I read to you where the examiner rejected that claim. What I am asking you is this, that claim did not require that this connection be adjustable, did it—I mean the 17th claim which was rejected did not say anything about the connection being adjustable?

A. No, did not say anything about the adjustability of the plunger.

[fol. 79] R. X Q. 169. Look at the 6th claim of your patent. You see there where that claim says: "coiled wire tube intervening and threaded to said stem."

A. It is only a means of attachment.

R. X Q. 170. You mean the screw threading of it is only a means of attachment—is that what you mean?

A. Yes, it says "threaded to."

R. X Q. 171. Claims No. 5 and 6 are the only claims of your patent in which the coiled wire tube is specified?

A. It is specified in this 6th——

R. X Q. 172. In 5 and 6, and nowhere else?

A. The claims are a little broader than some of the other claims.

R. X Q. 173. So that wherever your patent specified a coiled wire tube, it also requires that that shall be adjustably threaded into the stem, isn't that right?

A. That is what you have been making.

R. X Q. 174. Your patent requires, wherever it calls for a coiled wire tube, coiled wire inner tube, it requires——

A. No, it does not require that particularly. That is only a side issue.

R. X Q. 175. Please answer my question. My question is this—you said that the only claims of your patent which mentioned coiled wire tube are claims 5 and 6. You have said that in both of these claims, it is specified in one that there is an adjustable connection, and in the other one it is a threaded connection——

A. I will have to go through the whole thing——

R. X Q. 176. If you have to — through all of this, you need not do that, because the jury can do that. I thought perhaps you could answer without going through it. When I asked you about this screw threaded connection, you said something about the Patent Office examiner rejecting the [fol. 80] claims on a screw threaded connection, in reference to some other patent.

A. He rejected one claim in reference to some other patent, I believe.

R. X Q. 177. Do you remember that he did reject that on a patent which showed a screw threaded connection between one of these plunger devices and the thing it was fastened to?

A. That is my recollection.

R. X Q. 178. I am showing you this patent to Mr. Duryea. Do you remember that that is the patent on which the examiner rejected the screw threaded connection?

A. Yes, sir.

R. X Q. 179. That shows, doesn't it, the push rod with screw threads at both ends, which are screwed into the actuating handle at one end, and the thing to be moved at the other end?

A. It shows it on the one end at least. It shows it on both ends.

Redirect examination.

By Mr. White:

R. D. Q. 180. Reference has just been made to the Duryea patent, which has just been shown to you. I will ask you to look at it and tell us of what the outer casing consists, and of what the thrust member consists in that disclosure.

A. The outer member consists of a closed coil wire, evidently heavy enough to withstand the thrust or push on the thrush member without the use of a jacket.

R. D. Q. 181. Without any jacket?

A. Yes, sir. In other words, it is strong enough to resist the pressure that is put on it without expanding it, without the use of the jacket.

R. D. Q. 182. The inner thrust member——

[fol. 81] A. It seems to be a solid wire that would very easily kink.

Recross-examination.

By Mr. Davis:

R. X Q. 183. Mr. Gray, I think you are mistaken about that wire casing being heavy enough, so that it won't expand, so that it will resist the thrust. I call your attention to the drawing in Fig. 3. Do you see that wire which is marked with the letter 2?

A. Shall I answer this? This is in use in such things as motorcycles and things like that——

R. X Q. 184. Please try to pay attention to what I am asking you. You said, and I think you are mistaken, and I want to correct you, if you were—you said in this patent the wire of the outer casing was heavy so that it did not have to be held at the ends——

A. It would have to be or we could not transmit motion.

R. X Q. 185. Didn't you say to the jury a minute ago in answer to a question of Mr. White that the outside casing

wire was so heavy that it did not need to have anything to hold it together?

A. Yes, sir; I still say so.

R. X Q. 186. I direct your attention to this little wire. Look at it carefully. It is marked with the letter 2 in Fig. 3 of the patent. Do you see that?

A. Yes, sir.

R. X Q. 187. It is shown in Fig. 2 and also in Fig. 3.

A. I see it in Fig. 2, yes, I see it here.

R. X Q. 188. I am going to read to you from this patent what Mr. Duryea said about it. I am reading from page 1 of patent, line 71. He says: "To prevent this stretching or lengthening I pass through the coil 1 a single strand of wire 2, and fasten its ends to the ends of the coil 1, in any suitable manner, as shown at 3 in Fig. 2." Do you understand that?

[fol. 82] A. I understand that. I stand corrected. There is nothing outside, as I first stated, but there is a wire in the inside.

R. X Q. 189. In other words, instead of holding this thing together by the outside woven wire spacing, the way they do in photographic releases, it is held by an inside wire, marked 2?

A. Yes, sir.

. . . . . .

Mr. Edelson: These wire cables marked Plaintiff's Exhibits 14 to 31 inclusive, and 31a, are now offered in evidence.

Mr. Davis: It seems to me that it ought now to be indicated to the jury which ones of these several numbers manufactured by the Kodak Company are charged to be an infringement of this patent, and which of them are not charged to be an infringement.

Mr. Edelson: At this time the plaintiff states that the following are alleged to be infringing releases: Numbers 2, 8, 15, 16, 20, 23, 25, 26, 28 and 29.

Plaintiff at this time offers Eastman Kodak release No. 13, and adds No. 13 to the list of alleged infringing types of cable releases.

(Eastman Kodak release No. 13 designated as Plaintiff's Exhibit No. 32.)

. . . . . .

Mr. White: With the consent of counsel for the defendant, I will put into the record a tabulation of the number of alleged infringing releases manufactured within the statutory period, the same evidence having been checked from the evidence in the record by both parties.

[fol. 83] (Tabulation referred to is as follows:

"Total Quantities of Alleged Infringing Releases Manufactured from 6/12/24 to 6/5/30, Both Dates Inclusive

Type # 2	785000
# 8	6000
#13	990900
#15	7828
#16	242900
#20	31500
#23	9665
#25	36500
#26	10900
#28	42000
#29	250000
	3412293")

Myron F. Hill, sworn.

Direct examination.

By Mr. White:

Q. 1. Mr. Hill, where do you reside?

A. My legal residence is Lansdowne, Pennsylvania. My business address is Baltimore, Maryland.

Q. 2. What is your business or profession?

A. I have spent my life with relation to patents, both as to practicing as a patent attorney before the Patent Office, advising as to litigation, manufacturing and developing patented articles. I am now president of a company that licenses the use of inventions——

The Court: Let me inquire of counsel—into what are you proposing to go—the validity of this patent?

[fol. 84] Mr. White: On the question of infringement.

The Court: I had in mind, subject to the persuasive powers of counsel to change my mind, that you make out a prima facie case of validity by offering your letters patent in evidence, and your patent is valid until the other side has offered evidence of some facts which would render your patent invalid.

Mr. White: That is our view.

The Court: Then, of court, you have the right to reply to that, but the danger is, unless you draw that line very clearly the danger is we would be really duplicating evidence, just doubling the time of the inquiry.

Mr. White: My purpose is——

The Court: If you are going to restrict this to the question of infringement——

Mr. White: The infringement, also reasonable royalty.

The Court: For the present you are resting the decision on the question of validity upon the prima facies of your patent?

Mr. White: That is right.

By Mr. White:

Q. 3. What company is that?

A. Gerotor Licensing Company. The Gerotor is interpreted as generated rotor for compressors, pumps, and engine construction.

Q. 4. You have been engaged in this professional work all your life practically?

A. After graduating in college and taking a degree of Master of Arts I entered the Patent Office as an examiner. I was there between three and four years. Then I resigned, and since that time I have acted in the capacity of consult-
[fol. 85] ing engineer, head engineer of corporations, or as patent solicitor or as developing inventions for the market.

Q. 5. Mr. Hill, have you examined the patent in suit, granted to Charles B. Gray, No. 1,314,867?

A. Yes, sir.

Q. 6. Have you examined the alleged infringing releases which have been offered in evidence—type No. 2—I am going to ask you all at once, so we can get it clear—type No. 2, introduced as Plaintiff's Exhibit No. 21; type No. 8, introduced as Plaintiff's Exhibit No. 22; type No. 13, introduced as Plaintiff's Exhibit No. 32; type No. 15, introduced as Plaintiff's Exhibit No. 26; type No. 16, introduced

as Plaintiff's Exhibit No. 19; type No. 20, introduced as Plaintiff's Exhibit No. 16; type No. 23, introduced as Plaintiff's Exhibit No. 24; type No. 25, introduced as Plaintiff's Exhibit No. 25; type No. 26, introduced as Plaintiff's Exhibit No. 15; type No. 28, introduced as Plaintiff's Exhibit No. 14, and type No. 29, introduced as Plaintiff's Exhibit No. 23.

A. I can not remember them all by number, but I have examined all of these types.

Q. 7. I will show them to you so that you may be sure you have examined them. Is the number of each type stamped on the plunger?

A. Yes.

Q. 8. I am showing them to you so that you won't make any mistake about them.

A. I am familiar with Nos. 8, 29, 28——

Q. 9. I am going to ask you about each one separately. Perhaps we could do it that way and save a little time. Let us take up type No. 2, in the first place—do you find that?

A. No. 2, yes, sir.

Q. 10. You have examined that cable release, manufactured by the defendant company?

[fol. 86] A. Yes, sir.

Q. 11. I will ask you to look at Mr. Gray's patents. First, will you read Claim No. 1?

A. Mr. Gray claims in his invention a mechanism of the nature described——

Mr. Davis: I object to this. The jury can read it.

Mr. White: I am going to ask the witness what elements in these cable releases he finds which are identical with those disclosed in the claim in the patent. That is all.

The Court: If you ask that question, you are going into the question of validity, aren't you?

Mr. White: No, I am going into the question of infringement. I am asking him if the elements found in the disclosure are found in that release.

The Court: If you are going to ask whether they are disclosed in the structure of the defendant, that goes to infringement, but if you are going to ask him what are in the claims of the patent, that goes to the validity clearly.

Mr. Davis: It has already been stated, in answer to your Honor's question, and in the presence of the jury, that the

defendant does not deny that claims 1 and 2 of the patent are infringed, if they are valid.

The Court: What is the use of troubling yourself about that? Go to claims 3, 5 and 6.

By Mr. White:

Q. 12. All right, look at claim No. 5—read it to yourself.

The Court: The release you are asking about is the release of the defendant?

Mr. White: Yes, sir.

[fol. 87] The Witness: In claim 5 I find these elements of the claim in defendants' release: the two heads, which are these two heads here (indicating), two end pieces, a coiled spring wire tube, having spaced coils—that is the outer coil, spaced apart, which is proved by the fact that I can press them together; located between the heads, which is evident; a flexible means, joining the heads; this is the jacket or stocking or fabric or whatever you wish to call it, fastened to the two heads; definitely holding them at a fixed distance so that you can pull them further apart. The fabric holds those heads from being pulled further apart beyond a certain point, and at the same time it is quite evident that the spring is compressed endwise, proved by the fact that the whole unit tends to set pretty straight.

Mr. Davis: I think that I ought to say, to save time, what must already have been apparent to your Honor, that the defendant admits that all of the elements of claim 5 are present in defendant's structure except the element defined, adjustably joining of the stem to the tip and to the cushion. Also, with respect to claim 6, since I assume that counsel will go on to that, defendant agrees that all of the elements of that claim are present in its structure, except the element of threading the stem—threading the tube to the stem and to the slide member.

The Court: Is it agreed on your part, Mr. White, that these elements, excepting elements, which he mentioned, in each claim, are not present in the alleged infringing instrument?

Mr. White: No, your Honor. We claim it is present.

[fol. 88] The Court: Then limit yourself to that one thing.

The Witness: I have taken apart a number of these releases; I have disassembled or taken apart these releases,

a number of these releases of this type, and I find that the inner coiled tube is adjustably screwed to each head, as proved by the fact—I should say to each stem at each end—as proved by the fact that the stem can be unscrewed from the wire, if it is done in the right way. Now, that would never be done by a customer. That is only done in the factory where they are making the thing, adjusting them for one length or for another length—for one length of plunging action or another, or by some repairman who may want to readjust the release to the particular camera he was repairing. I do find that the connection is such that it may be adjusted. I also find that it is a modification, you may say, of threading joint.

I find that the tube into which the inner coil is inserted has a nick in it. That causes a depression on the inside of the tube, separating the coil, which makes it possible to twist that coil in such a way that it will go right out again, and you can pull it out or push it back and adjust it in different positions. The thread is very much like that of a bottle which I picked up this morning in a drug store. The coil, you may say, has the effect of this thread on the glass——

Mr. Davis: I object to the relevancy of the bottle in this case.

The Court: He is simply using it for the purpose of illustration.

[fol. 89] The Witness: It happens to be a tube with a depression in it—two depressions. As you turn it, it tightens up like a screw.

By the Court:

Q. 13. Wherein does it differ from any screw——

A. Just the length of the thread upon this member.

Q. 14. You may have a long one or a short one.

A. Yes, sir.

Q. 15. In principle they are all the same?

A. I find that idea in all these releases.

By Mr. White:

Q. 16. When you say all the releases, you mean those you have been shown?

A. Yes, sir; I have been through all of these exhibits.

Q. 17. What experience have you had in determining what licenses are properly payable under patents?

The Court: Why limit it to patents?

Mr. White: Or the use of any invention or device.

The Court: General experience with the adjustment of royalties.

The Witness: During my experience as patent attorney in general practice, from the year 1907 until 1918 I was in the habit of drawing up licensed contracts for clients for the sales of their inventions, discussing with the inventor the amount of royalty that he was entitled to charge for the particular invention that he had in mind or that he had in hand, and since the year 1921 I have been engaged in this particular licensing business. The first part of the period was that of development, during which time various [fol. 90] proposals came up from manufacturers for licenses, resulting in a discussion of the proper terms for a license, with such corporations as the Westinghouse Company, the Westinghouse Airbrake Company, Union Carbon and Carbide Corporation, and other companies of that kind. We have executed a number of licenses, based upon royalty, perhaps the latest one being that of the May Oil Burner Corporation, where we had to fix a license royalty; where it was fixed, based upon an invention which was incorporated and is shortly coming out in large advertisements, in their oil burner set, for the use of this mechanism in pumps and oil pumps. We are in contact with other large corporations. Even this morning I was having a discussion with one of the men representing the development in that direction, involving some half million units a year, and the question of royalty, the subject of royalty, has been brought up in my work almost from the very beginning—one of the principal things connected with patents, aside from an occasional sale.

By Mr. White:

Q. 18. Mr. Hill, we have before us a device which you have examined; we have certain evidence regard the same which you have heard—you have been here during this trial?

A. Yes, sir.

Q. 19. Based upon your experience and knowledge will you express your opinion as to what would have been a fair

and reasonable royalty for the defendant to pay the plaintiff for the use of this invention, assuming it is his to bargain for, during the period of six years prior to June, 1930?

Mr. Davis: That is objected to.

The Court: On what grounds?

[fol. 91] Mr. Davis: Upon the ground that the general question of this kind is not admissible to go to the jury on the question of royalty.

By the Court:

Q. 20. Let me ask you—here is a royalty which is fixed in a particular case, depending upon the special conditions surrounding that case, or is there any general rule of practice fixed upon a percentage of the selling price or cost price or any other feature of the patent?

A. Of course, there is no fixed amount of royalty that you can say is universal for the use of patents. It is a very common thing to find a royalty of 10 per cent.

Mr. Davis: That is objected to.

The Court: Strike out 10 per cent and say it is based upon a percentage.

The Witness: I was going to modify my answer to get the same results.

The Court: Strike out the 10 per cent.

The Witness: Based upon a percetage of the selling price to the consumer; that percentage varies with the value of the invention and the circumstances surrounding the industry within it.

The Court: I think that gets it very clear. Do you renew your objection?

Mr. Davis: Yes, sir.

The Court: I will overrule your objection and give the defendant an exception.

By Mr. White:

Q. 21. Will you answer the question?

A. I have thought this over very carefully——

The Court: Does he have in mind—I will be corrected in this statement if I am wrong—that the wholesale selling

[fol. 92] price of these releases is twenty-three cents, and the retail price thirty-five cents?

Mr. Davis: Yes; also sold separately from the cameras. Those that were sold with the cameras, we will put in evidence as to what they were sold for later.

By Mr. White:

Q. 22. You also have in mind, I assume, the fact, as Mr. Davis has just intimated, that probably the major portion of these releases are sold in connection with cameras?

A. Yes, sir; I am also assuming a manufacturing cost, having been a manufacturer myself for nine years——

Q. 23. Don't mention any amount in that case.

A. One comes to certain conclusions about cost of manufacture. Also one is familiar with the usual business practice, determining the cost of manufacture, determining the sales cost, any other cost, multiplying that by a figure for a retail list price—for instance, furnishing the discount from that list price to the distributor, leaving the net profit to the manufacturer.

Q. 24. What other elements did you take into consideration in determining what a reasonable royalty is, in expressing your opinion of what a reasonable royalty should be?

A. I have taken into consideration the fact that some of these releases may be in use, on the one hand, and on the other hand, that they affect the value of the camera as a whole, to make it a more satisfactory instrument, making it more easily sold in competition with other cameras not properly manufactured, or not so manufactured, running into values that are impossible to determine, and in arriving at a proper figure one has to be practical, and in giving [fol. 93] an opinion of my own as to the matter, I have tried to arrive at a figure which seems to me to be ultra-conservative. For example, if this release was a complete article by itself, that did not affect the camera or some other instrument, and costing vastly more, in proving its value, I would not fix the same royalty that I have in mind. A cheap toy—35 cent toy, perhaps a penny would be plenty, at the beginning and at the end of it. It doesn't affect the value of anything else. You cannot charge 10 per cent on the cost of the camera. That would be out of reason. What can we fix as a basis to fix the value? The public is paying

35 cents for these things. If we fix 10 per cent on that, that is 3½ cents apiece—

Mr. Davis: I object to the argument of the witness.

The Court: I would like you to tell me if the opinion of any expert on anything is not a real argument.

The Witness: There is another factor that enters into that price, as it stands today, the royalty itself, if we put a 3½ cent royalty in there, it raises it from 35 cents to 38½ cents.

The Court: Do I understand that you are objecting to his giving the reason for his opinion?

The Witness: I haven't given my opinion yet.

Mr. Davis: No, I am not objecting to him stating those things which he took into consideration.

The Witness: I have nearly finished the considerations that brought me to the opinion I came to. It costs something to collect 3½ cents royalty, to do the accounting. It is customary to add the licensed cost to all the other factors of cost together to determine the total. That would [fol. 94] bring the selling price perhaps altogether too high—nobody knows where it would run. But, if we allowed a cent and a half, say, for cost, and gave a profit on the extra investment that they are putting into the cost of these releases, that would bring a price of 40 cents instead of 35 cents to the customer. I should think that a minimum royalty that ought to be charged would be four cents a release. That is my judgment.

By Mr. White:

Q. 25. That is your opinion, four cents a release?
A. Yes, sir.

Cross-examination.

By Mr. Davis:

X Q. 26. Mr. Hill, when you made your estimate of this royalty, did you know what the total cost of the releases was to the seller? That is, the manufacturing cost and also the selling cost?

A. No.

X Q. 27. You mentioned that if a royalty were added to the article, that royalty would be multiplied in the distribution and bringing of the goods to the public finally?

A. That is generally done.

X Q. 28. What you meant by that was that if you should add four cents to this twenty-three cents of the manufacturer's selling price, why then every distributor would add his profit to that four cents, so that by the time it got to the public that four cents would be eight cents; is that right?

A. Yes.

X Q. 29. So that it was your opinion that it would be a fair thing to add eight cents to the price of this device to the public?

A. No. I felt that five cents, under the circumstances, is about as high as the release ought to be sold at. The mo- [fol. 95] ment you begin to increase the price, it affects the sales perhaps.

X Q. 30. Then your idea is that five cents is the most that you could all to the thirty-five cents?

A. I should think that would be—we would have to scale it down to that point, yes.

X Q. 31. You mentioned, you said you thought a fair royalty would be 10 per cent, but you did not say 10 per cent of what.

A. Of forty cents.

X Q. 32. That is 10 per cent of the new price of the article?

A. Yes.

X Q. 33. After the royalty had been added on to it?

A. Yes.

X Q. 34. Did you take into consideration in arriving at that opinion whether or not there were available other releases that could be sold and used for the same purpose at the same price?

A. I did take that into consideration, and I also took into consideration a balancing factor, the increased value of the camera itself to which it was attached, which was disregarded otherwise.

Mr. Davis: Will your Honor instruct the witness to answer my questions and confine himself to that?

The Court: Well, the witness is evidently making the best effort he can to answer your questions, but it of course is well for him to have in mind that you better confine your answers to the specific questions that are asked of you. Of course, you have the right to make your answer clear,

but if there are any other matters to be brought out, counsel will bring them out on re-examination. So, as a general proposition, limit your answers to replies to the questions that are asked you.

[fol. 96] By Mr. Davis:

X Q. 35. Mr. Hill, you recall that when the plaintiff's lawyers put in evidence these releases manufactured by the Eastman Company, they put in a number which they do not charge to be an infringement of the patent.

A. I understand that.

X Q. 36. And you understand that the reason these other numbers, which are Nos. 3, 4, 5, 6, 7, 10, 11 and 12, are not charged to be an infringement is that they do not have the coiled inner tube or push member, but instead have a straight wire?

A. Yes.

X Q. 37. Do you know whether these devices which are not charged to infringe the patent are sold to the public with the Eastman Company's cameras or separately at the same price that those are sold which are charged to be an infringement?

A. I presume that is likely. I do not know.

X Q. 38. Did you know that?

A. No, I would not say that I knew it.

X Q. 39. You did not take that into consideration?

A. Yes, I did take it into consideration.

X Q. 40. Even though you did not know it?

A. Well, I understood that there were some of these numbers that were not made according to this principle, and that they were sold. Just what was in them I did not know. I did not know whether they had a straight wire or twisted wire or twisted strand or what they had.

X Q. 41. Now, to come to this matter of what you say is an adjustable connection of the coiled wire tube to the tip and to the push button, in your testimony you said that in the factory these things were screwed on and off to adjust the length?

A. No, I beg your pardon, I didn't say that.

[fol. 97] X Q. 42. What did you say?

A. I said that they could be adjusted to different lengths for different purposes.

X Q. 43. But you mentioned the factory, and you said in the factory they are so adjusted.

A. In the factory—the adjustment was made either in the factory or the repair shop.

X Q. 44. You do not know whether they are adjusted in the factory or not to produce different lengths?

A. Undoubtedly they are adjusted in the factory to the right length.

X Q. 45. And you have been in the factory?

A. No, but I can see the results, that presumably work with the camera.

X Q. 46. You say that there is occasion for having these release members of different lengths for different cameras, is that true?

A. I said it might be done for that purpose. I said it was capable of that use, yes.

X Q. 47. What I am asking you is, I understood you to say there were occasions when for different cameras you did need to make those of different lengths?

A. I could imagine, if the movement was a short one and a precise one and were to take place, that an adjustment might be desirable.

X Q. 48. Did you ever try to adjust one of these Eastman releases and then make the camera work with it?

A. I have tried the adjustment on the release, but I have not applied it to a camera, no.

X Q. 49. And as I understand it, you have screwed off part way the tip of one of these releases, but you never then put the release back on the camera to find out whether it would work?

[fol. 98] A. I have gone through the releases, testing one here and there, enough to satisfy myself that all of the releases of the same construction have the same action, capable of being adjusted.

X Q. 50. I do not think you understood my question. The question was whether you ever made such an adjustment on one of these releases and then tried to put that adjusted release back on to the camera shutter and make the shutter work?

A. No, I have not adjusted one to any camera.

X Q. 51. Now I want to take up with you this matter of what you refer to as the screw threaded connection, by reason of the fact that the inner member is a coiled wire and there is a little pin prick or dent in the tube that is passed over it. As I understand, it is your idea that that makes in effect a screw threaded connection?

A. For the purpose of that adjustment, yes.

X Q. 52. I show you a device, one of these devices, one of these releases. Will you look at it and tell me if it has a coiled wire inner member?

A. Yes.

X Q. 53. And the little tube at the end is fastened on by a prick pinch?

A. Yes.

X Q. 54. Indentation in the metal?

A. And by a threaded edge, apparently.

X Q. 55. And would you say that that is a screw threaded connection?

A. It acts like a screw threaded connection for the purpose of maintaining an adjustable condition, because you can pull it out before you make a pinch, or you can put it back, and you can make the indentation to hold those threads in any position.

Mr. Davis: If the jury please, I call your attention to the fact that this device which the witness says has a screw [fol. 99] threaded connection is the device which has been offered in evidence and which was sent by the Eastman Company to Mr. Gray when Mr. Gray in 1919 first brought his supposed invention to the attention of the Eastman Company. I would like to note on the record that the release referred to is in evidence as a part of Plaintiff's Exhibit 8.

Louis A. Darling, sworn.

Direct examination

By Mr. White:

Q. 1. Mr. Darling, will you as briefly as you can just give us your history as a mechanical engineer?

A. Graduate mechanical and electrical engineering, Kentucky University. Spent nine years in teaching in four universities, namely, University of Nevada, Reno; Stanford University, California; Swarthmore College, Pennsylvania; and Cornell University, New York. The time was spent in teaching and engineering work, design work and shop work, and lecturing, and writing of textbooks, two of which are

nised at Cornell University and elsewhere for a great many years.

Q. 2. On what subjects?

A. Elements of drawing and elements of descriptive geometry.

Q. 3. You are a mechanical engineer by profession?

A. I took a master's degree at Stanford University, in addition to the degree of B. M. E. at Kentucky.

Q. 4. Have you been engaged also in a practical way in engineering work?

A. For eighteen years I have been in general engineering work. Three years at the General Electric Company in turbo generator design and part time in charge of the [fol. 100] Thompson-Husing Apprentice Trade School; and three years at Grand Rapids, Michigan, with the R. G. Peters Company, as manager of that manufacturing corporation; three years with the Reno Electric Company in connection with turbo generator design and headlight design; and one year in Boston, with a company which I organized myself, which was sold out to the Electric Service Supplies Company in this city, where I have been for twelve or thirteen years.

Q. 5. You now have what position with the Electric Service Supplies Company?

A. At present I am in a consulting capacity in connection with the interpretation of their designs looking towards getting out patents, and also I am connected in engineering sales work with James Spear Stove and Heating Company.

Q. 6. Have you examined the patent in suit, Mr. Gray's patent?

A. I have.

Q. 7. And especially claims 5 and 6 thereof?

A. Yes.

Q. 8. And you have also examined, have you, the exhibits which are there on the balustrade beside you?

A. Yes.

Q. 9. And which are those which have already been enumerated and examined by Mr. Hill?

A. Yes, I have seen them.

Q. 10. Now, confining yourself to one or two points, in claim 5 of the patent in suit, claim is made, as you know, for a cable release containing an outer open coiled spring

casing and an inner coiled tube, which is a closed coil, and then the claim continues, and adjustably joined to said stem; that is the intervening coiled wire tube, adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member. Will you kindly tell us whether or not that element [fol. 101] is found in the infringing articles, or the alleged infringing articles, which have been offered in evidence and you have before you?

A. There is an adjustable means at both ends of that inner coil.

Q. 11. Of what does it consist?

A. It consists of an outer tube over each end, an indentation in the outer tube, which extends down in between the coils of the coiled spring.

Q. 12. Now, turning your attention to claim 6, it refers to and claims in connection with the statements of the nature of the invention, which I just referred to, a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion. Now, will you state whether or not that element is found in the alleged infringing article?

A. It is a form of threaded joint.

Q. 13. Do you wish to explain that any further, or do you think that is covered by your answer?

A. A thread is an incline that goes around a center. A nut is anything that works on the outside of it; that is some indentation or some means of climbing up and down the incline when you turn it. That is what a thread is.

Cross-examination.

By Mr. Davis:

X Q. 14. Dr. Darling, I am going to show to you too this release which was sent by the Kodak Company to Mr. Gray in 1919 and is in evidence as a part of Exhibit 8, and that has the coil, the wire inner member, hasn't it?

A. Yes.

X Q. 15. And the tip is fastened on to that by this same prick punching or indentation which you say makes it into a screw threaded connection?

A. It will function that way.

[fol. 102] X Q. 16. In other words, everything that you have said about the defendants' structures which are charged to be an infringment is equally true about this device which was sent by the Kodak Company to Mr. Gray in 1918?

A. Yes, these exhibits, they have the same construction.

Redirect examination.

By Mr. White:

R. D. Q. 17. However, Dr. Darling, will you tell us what the construction of that is with regards the other members of it?

A. The total members in the whole thing?

Mr. White: Yes.

Mr. Davis: If the Court please, I object to this. It was testified by the plaintiff, Mr. Gray, that the only difference between this device that was sent to him in 1918 by the Kodak Company and the device which he had sent to them as an embodiment of his supposed invention was that the device sent to him by the Kodak Company had a tightly wound outer casing, and the device he sent to them had an open wound outer casing.

Mr. White: That is right.

The Court: What have we to do with that, anyhow? That was before the patent was issued.

Mr. White: That is quite true, but Mr. Davis handed him this and had him point out that there is a threaded connection, and he asked the question and got such an answer as to suggest that it was the same thing as the plaintiff's invention. I just wanted to make clear that this has a closed coil on the ouside and not an open coil.

The Court: What is this, examination in chief or re-examination?

[fol. 103] Mr. White: This would be re-examination.

(Question R. D. Q. 17 repeated by the stenographer.)

The Court: That is directed to this adjustable feature in the one claim and the threaded feature in another claim?

Mr. White: No. I was just wanting to create no misimpression that this was just like the plaintiff's device. That is all.

The Witness: I was speaking with reference to the joint.

Mr. White: The cable release now in the hands of Mr. Darling was handed to him by counsel for the defendant. It is already in evidence. It is an Eastman Kodak release which was sent to Mr. Gray at the time when they sent back the sample he sent them in 1918.

The Court: Now, the question is what?

(Question R. D. Q. 17 repeated by the stenographer.)

The Court: Unless there is an admission that that release was made, used or sold by the defendant after the patent issued, I do not see that we are concerned with it.

Mr. Davis: Well, the concern with it is on a different aspect of the case, if your Honor please; but the only question here is that counsel thought that perhaps the jury had been misled by what Dr. Darling said into supposing that he was saying that the two things were the same throughout and all he said was that the threaded connection was the same.

[fol. 104] The Witness: That is right.

Mr. Davis: I think there is really no dispute about that.

Mr. White: No, there is not.

Mr. White: Now, if the Court please, I am formally offering in evidence the depositions which were taken on the motion of the defendant to quash the summons and set aside the service. I offer in evidence the depositions and all exhibits connected therewith, so that they may be made a part of the record.

RENEWAL OF MOTION TO QUASH, ETC.

Mr. Davis: And the defendants, Eastman Kodak Company of New York, and Eastman Kodak Company, a corporation in New Jersey, now renew their motion for quashing of the writ and setting aside of the service, and for a nonsuit as to those two defendants.

The Court: The record may show your renewal of the motion respecting the service of process, and your motion for a nonsuit is overruled.

Mr. White: Our case is closed.

Mr. Davis: Exception.

The Court: It is not the subject of exception. The record may show that you asked for one, but it is not the subject of exception.

Plaintiff rests.

[fol. 105] EVIDENCE IN BEHALF OF DEFENDANTS

ALBERT K. CHAPMAN, sworn.

Direct examination.

By Mr. Davis:

Q. 1. Mr. Chapman, you are connected with the Eastman Kodak Company of New York, at Rochester, New York?

A. I am.

Q. 2. What is your position?

A. Production manager.

Q. 3. How long have you been with them?

A. Since 1919.

Q. 4. Do you know whether or not these camera releases are sold separately from the cameras in some cases and in other cases are sold with the cameras?

A. Yes, that is true.

Q. 5. You were here in court when plaintiff's counsel put in evidence two sets of the Eastman Kodak Company's releases, one set of which was charged to be an infringement and the other set was not charged to be an infringement?

A. I was.

Q. 6. Do you know whether all of those releases are sold by the Eastman Kodak Company when they are sold separately from the camera at the same price?

A. Yes, they are sold at the same price.

Q. 7. No differentiation in price made between those releases which contain the closed coil push member and those which contain the wire push member?

A. No, there is no difference in price.

Q. 8. When you sell these releases attached to a camera, is the price of the release merged in the price of the camera?

A. Yes, it is.

[fol. 106] Q. 9. Has the Eastman Company ever made any special charge for its cameras on account of the use of

this type of release in which there is a coiled inner member?

A. No, never has.

Q. 10. Now, I show you a letter which has been put in evidence as Plaintiff's Exhibit 13, dated October 31, 1923, and addressed to C. B. Gray, the plaintiff here. Did you write that letter and is that your signature at the end of it?

A. Yes, I wrote the letter and that is my signature.

Mr. Davis: I will read the letter to the jury to refresh your recollection. It has already been in evidence. The letter says:

"DEAR SIR: Since your call upon us a few days ago, we have given careful consideration to your U. S. patent No. 1,314,867, September 2nd, 1919. Because of the circumstances outlined in detail to you by Mr. Stewart of our Patent Department, we find that we must adhere to the opinion that our cable releases do not infringe any valid claims of your patent.

On June 21st, 1918, one of your cable releases embodying the construction mentioned in the above patent was sent to us by Mr. Knaffl. This cable release we found to be similar to cable releases which we had made and marketed for several years except for two features, both of which were not original with you. First, the flexible casing included an open coil spring, and second, the plunger of the cable release consisted of a closed coil spring. We knew of the open coil spring before your cable release was submitted to us as is shown in the following United States patents:

[fol. 107] 828,815, Edwards, August 14, 1906,
929,573, Edwards, July 27, 1909.

The use of a closed coil spring thrust member is shown in our U. S. patent No. 1,297,327, Dakin, et al., March 18th, 1919. We filed a patent application for this device October 15th, 1917, eight months before your cable release was submitted to us. Claims to this closed coil spring thrust member were abandoned because of its being shown in an old German patent No. 147,572, Werman, May 28th, 1902.

We feel that the circumstances outlined above furnish convincing evidence that the cable release which you submitted to us differed from those which we had had on the market for years only in these two ways, and that cable re-

leases embodying the construction constituting these two differences are clearly shown in the prior art.

We hope that, after you have had an opportunity to review these matters with your attorney, you will agree with us in believing that our contentions are correct. Meanwhile we wish to thank you for the courteous way in which you have approached us on this subject.

Yours very truly," and so forth.

By Mr. Davis:

Q. 11. Now, Mr. Chapman, did you have an investigation made to ascertain the facts that are set forth in that letter before you wrote it?

A. Yes, we did.

Q. 12. And did the letter accurately state the facts as they existed at that time?

A. It did.

Q. 13. And did you ever hear any more from Mr. Gray on the subject?

A. No, not to the best of my recollection.

[fol. 108] Cross-examination.

By Mr. White:

X Q. 14. Mr. Chapman, you have spoken of those rather considerable number of other types of your releases which Mr. Davis showed you which do not contain the feature of the inner closed coil but use a wire or some other such——

A. Yes.

X Q. 15. Is it not a fact that the number so manufactured during the period in controversy, with wires or some other member except the closed coil spring, amounted to 136,000 as against nearly four million altogether?

A. I don't know whether those figures are correct or not.

Harry L. Thomas, sworn.

Direct examination.

By Mr. Davis:

Q. 1. Mr. Thomas, you are connected with the Eastman Kodak Company of New York, at Rochester, New York?

A. Yes.

Q. 2. In what capacity?

A. Accountant.

Q. 3. You have made an examination of the records of the company with respect to the number of these cable releases that have been sold by the Eastman Kodak Company of New York in the period covered by these proceedings?

A. Yes, I have.

Q. 4. Can you tell us what is the sales price of releases which are sold in the United States apart from cameras; that is, the price of the Eastman Company to its distributors?

[fol. 109] A. Twenty-three cents.

Q. 5. And that is regardless of the type of release? They are all sold at the same price?

A. At one price.

Q. 6. It has been testified that when the release is sold with the camera the selling price of the release is merged in the selling price of the camera. Have you made an examination of the figures which enable you to say what is the selling price of a release sold with a camera?

A. Yes, I have.

Q. 7. And will you tell us how you went about that and what the result was?

A. I found the relation of the cost of the cable release to the cost of the camera.

Q. 8. That was the first step?

A. And applied that percentage to our selling price of our camera.

Q. 9. What was the selling price of the release attached to the camera, the average selling price of those sold in the United States?

A. During the six-year period, eleven cents.

Q. 10. How are these cable releases sold abroad?

A. The average selling price represents cost plus 15 per cent.

Q. 11. And that is whether they are sold with the camera or apart from the camera?

A. Yes.

Q. 12. And have you figured out what that selling price would amount to per unit?

A. Yes, I have.

Q. 13. What is it?

A. Approximately eight cents apiece.

Q. 14. That is, to recapitulate, those releases which are sold in this country separate from cameras are sold for twenty-three cents apiece; those which are sold with cameras in this country are sold for eleven cents apiece; [fol. 110] and all those sold abroad are sold for eight cents apiece?

A. Yes.

Q. 15. Can you tell us how the sales of these releases are distributed during this period, how they have been distributed with respect to sales, separately in the United States, as well as with cameras in the United States and the sales abroad?

A. Yes, I can. In the United States there were 1,605,194 sold as parts on cameras; 503,990 were sold as separate units; there were 10,178 that were used on free repairs; and 1,602,436 were exported.

Mr. White: In what period did you ask him?

Mr. Davis: This is the period covered by the proceeding, the statutory period.

By Mr. Davis:

Q. 16. There has been evidence here of the factory cost of these releases as it is shown on these record cards. Now will you tell us what is added to the factory cost to make up the actual cost to the Kodak Company of the releases?

A. The factory cost consists of the direct labor, direct material, and our factory overhead.

Q. 17. And then when you get that factory cost, what do you add to it to determine the actual cost to the company including sales and everything?

A. We add our selling and administrative expenses, and in addition to that we have a wage dividend and Federal taxes.

Q. 18. Is that selling cost a fixed percentage of the factory cost price or what?

A. The selling cost is based on sales.

Q. 19. That is on the selling price?

A. On the selling price.

Q. 20. And it is a fixed percentage of the selling price?

[fol. 111] A. Over this six-year period, yes.

Q. 21. Now will you tell us whether you have made such additions to the factory cost by calculation with respect to these releases?

A. Yes, I have.

Q. 22. And have you then made a calculation or estimate of the total net profits to the Eastman Kodak Company from the sale of all these releases in the statutory period?

A. Yes, I have.

Q. 23. Will you tell us what that total is?

A. $73,602.

Q. 24. And will you tell us how it is divided, if you can, among the releases sold separate from cameras and on cameras, in this country?

A. Yes, I can. Sold as part of cameras, we have a net profit of $26,977. Sold separately in the United States, $36,308.

Q. 25. And what about the sales abroad?

A. Exports, $10,317.

Q. 26. Now, that total figure, $73,602, includes the net profit on all of the releases during that period, including those which were not charged to be an infringement, is that right?

A. That is right.

Q. 27. Have you been able to say what part of that total was profit with respect to those which are charged to be infringements?

A. It represents 91.68 per cent.

Q. 28. And what is the total figure?

A. $67,478.

Cross-examination.

By Mr. White:

X Q. 29. Mr. Thomas, do you mean to say that those types of cameras which are not infringements constitute —did you say 97 per cent?

[fol. 112] A. I did not.

X Q. 30. In other words—I heard the figures just wrong —91 per cent, according to your own calculation, of the releases which you sell are those which are alleged to be of the infringing type?

A. That is true.

X Q. 31. Now, you said what the price was of the release received by the Eastman Kodak Company, but you did not

mention the price charged to the consumer. Do you know what that is?

A. I am speaking now of the Eastman Kodak Company of New York. Our net selling price is twenty-three cents.

X Q. 32. My question was how much the price was when the release was sold to the consumer?

A. Thirty-five cents.

X Q. 33. How did you determine that the average selling price of releases attached to the camera was eleven cents?

A. Took our camera sales, domestic sales, over the six-year period, June 9, 1924, to June 9, 1930, and arrived at the selling value, and then we found out the relation of the cost of the cable release to the cost of the camera, which was 1.2 per cent, and applied that to our average selling price on cameras during the six-year period.

X Q. 34. Now, you do not seriously mean to tell this jury that that represents the cost of selling those—what you received for those releases, do you?

A. In relation to the price of the camera.

X. Q. 35. If the release was very much less expensive to make than the other parts of the camera, that would indicate that you got very much less for it than you really did, wouldn't it?

A. Quite true, yes.

X Q. 36. Have you got the average cost of making these releases in your mind?

[fol. 113] A. Yes, I have.

X Q. 37. How much is it?

A. 6.96 cents.

X Q. 38. And the average cost of the camera is, I suppose, then, how much?

Mr. Davis: I object to that.

Mr. White: You can not give a figure and then not explain it.

Mr. Davis: You yourself withdrew yesterday afternoon the cost and selling price of the cameras.

Mr. White: Well, I know, but he can not make a statement and then we not cross-examine him on it. I am just asking him to test his figures.

(Objection withdrawn.)

(Question No. X Q. 38 repeated by the stenographer.)

The Witness: I haven't the working papers here.

By Mr. White:

X Q. 39. Well, how much is the average cost of a camera?

A. I will have to look that up.

X Q. 40. Well, if you haven't got that before you, how could you determine the percentage that the cost of the cable release was of the average cost of the cameras?

A. Approximately $9 apiece.

X Q. 41. That is the average of all types, is it?

A. Yes.

X Q. 42. That used cable releases?

A. Yes.

X Q. 43. You are sure you did not include those that do not use cable releases?

A. These cameras just apply to the ones that use cable releases of all kinds.

[fol. 114] X Q. 44. And then you get a percentage of the cost of the cable to the cost of the camera, and that you assume is what you get when you put it on the camera?

A. Yes.

X Q. 45. That is right, is it?

A. Yes.

X Q. 46. Now, what percentage is that? I think you told us, but tell us again.

A. 1.2 per cent.

X Q. 47. What is the average selling price of those cameras that you are dealing with?

A. That is the question you just asked. I said approximately $9 apiece.

X Q. 48. Oh, I meant to ask you the average cost of production of the cameras?

A. About $5.40.

X Q. 49. Mr. Thomas, you mentioned a figure which you said was the profit, according to your calculation, on the sale of cable releases, of $73,000?

A. Yes.

X Q. 50. Did that include the releases sold abroad?

A. Yes, it did.

X Q. 51. A very large part of the product goes abroad, does it?

A. About a third of the cable releases.

JOSEPH E. SIEGFRIED, sworn.

Direct examination:

Mr. Davis: Maybe it will help the jury if I say now that Mr. Siegfried is called to identify certain drawings which will be testified about later by another witness. It is more or less formal testimony.

[fol. 115] By Mr. Davis:

Q. 1. Mr. Siegfried, you are connected with the Eastman Kodak Company at Rochester, New York?

A. Yes.

Q. 2. In what capacity?

A. Draftsman in the camera works, Eastman Kodak Company.

Q. 3. How long have you been there?

A. I have been in the employ of the company for twenty-six years, in the drafting room 18.

Q. 4. Mr. Siegfried, I show you a photostat of the Eastman Kodak Company's drawing No. 14511, which has heretofore been offered in evidence on behalf of the plaintiff as Plaintiff's Exhibit 26. Can you tell us whether you know when that drawing was first made?

A. April 14, 1917.

Q. 5. How do you know that?

A. By the date after the initials of the man that drew it.

Q. 6. Did you check the drawing at the time it was made?

A. I did, for details and date.

Q. 7. And are your initials on the drawing?

A. They are, J. E. S.

Q. 8. When did you put them there?

A. Possibly the same date that the drawing was made.

Q. 9. After checking the drawing?

A. After checking the drawing.

Mr. White: That is the drawing of the closed inner member?

Mr. Davis: That is the drawing of the closed coil inner member.

[fol. 116] By Mr. Davis:

Q. 10. I show you the Eastman Kodak Company's drawing No. 15131. Can you tell us what that is a drawing of?

A. A drawing of an open wound spring casing.

Q. 11. When was it made?

A. May 8, 1918.

Q. 12. And did you check it at that time?

A. I did.

Q. 13. Are your initials on it?

A. My initials on it, checked by J. E. S.

Mr. Davis: I offer that in evidence.

(Eastman Kodak Company drawing No. 15131 designated as Defendants' Exhibit No. 3.)

By Mr. Davis:

Q. 14. I show you a print photostat of the Eastman Kodak Company, drawing No. 15132; will you tell us what that is a drawing of?

A. That is an assembly drawing of several cable releases.

Q. 15. That is you mean it is an assembly drawing that illustrates the construction?

A. Illustrates the construction of several different number of cable releases.

Q. 16. When was that made?

A. That was made May 14, 1918.

Q. 17. Did you check it at that time?

A. I did.

Mr. Davis: I offer that in evidence.

(Photostat print of Eastman Kodak Company drawing No. 15132 designated as Defendants' Exhibit No. 4.)

By Mr. Davis:

Q. 18. There is written on that photostat, Mr. Siegfried, in white pencil, the words, "change No. 477, 5/11/20," and [fol. 117] then off at the right, in white pencil, No. 15297. Can you tell us what those marks mean?

A. Whenever we receive a drawing from the drafting room for a change, that drawing or a print is taken from the drafting room file, and marked with the number of that change, which appears on the slip that calls for that change.

Q. 19. What was the change that is called for by this number 477?

A. That is not on this print. It would appear on a future print, a white drawing, the original drawing.

Q. 20. Can you not tell from the print what the change was?

A. No, because it is not on this. This — a reference print or a record print. That number will appear on the drawing, the original drawing.

Q. 21. I show you another drawing, which is No. 15132. Is that the original drawing?

A. That is the original drawing; yes, sir.

Q. 22. Now, can you tell from that what this change No. 477 was?

A. Yes. It was the addition, or the change, rather, of a part number only, no constructional change.

Q. 23. That is the drawing itself was not changed at all?

A. The drawing itself was not changed by that change number.

Q. 24. Merely changed the——

A. Number of an assembly. That is just simply an assembly number change.

Q. 25. That is, it changed the number at the end of the top line of this list of numbers which appears immediately above the box in which your check is made; is that right?

A. Yes.

[fol. 118] Cross-examination.

By Mr. White:

X Q. 26. Mr. Siegfried, I understand this drawing is a drawing of a cable release which was originally made in 1918, May 14th?

A. Yes, sir.

X Q. 27. I see noted on here that at certain times certain changes were made. That is as noted on the copy, I suppose?

A. Yes.

Mr. Davis: May it be noted on the record that counsel is referring to the original drawing No. 15132?

Mr. White: That is right.

By Mr. White:

X Q. 28. Now, Mr. Siegfried, won't you tell us whether or not there is in your record a specification, what we might call a master specification, bringing together the various parts of a cable release?

A. I believe there is.

WILLIAM H. ZIMMER, sworn.

Direct examination.

By Mr. Davis:

Q. 1. Mr. Zimmer, you are connected with the Eastman Kodak Company at Rochester, New York?

A. I am.

Q. 2. In what capacity?

A. I am acting as an assistant to the production manager.

Q. 3. How long have you been with them?

A. 1911.

Q. 4. Has the Eastman Company a system by which it issues instructions for and keeps records of the designs of [fol. 119] the parts which it manufactures and changes in those designs?

A. They have.

Q. 5. And will you tell us how that system originates, the first design, of a particular thing like a cable release?

A. The instructions were issued in the form of a pink note, which was sent to all the manufacturing departments, announcing the manufacture of any new product that the company has decided to begin, and usually relating the details of the tool equipment and the dates or the order numbers on which the manufacture should begin.

Q. 6. And those pink slips are given a serial number?

A. They were given a serial number.

Q. 7. Now, suppose you afterwards make a change in that construction. How do you number the pink slip which initiates the change?

A. The change was given an alphabetical series. The original note would go out under a number, and any changes on that particular item would be an alphabetical change, an a, b, or c note issued later.

Q. 8. I show you a pink slip which has a tab on it with the number 91, dated July 19, 1917. Can you tell us what that is?

A. Yes. This is an announcement to the heads of all camera works departments that a new model cable release has been designed.

Q. 9. Did you issue that yourself?

A. Yes.

Q. 10. What date?

A. July 19, 1917, this note was written.

Mr. Davis: I read this pink slip to the jury, as follows:

"New model cable release has been designed using a wire [fol. 120] wound cable, and new part lists have been written up on the No. 2-7 inch, No. 13-3 inch, and No. 16-9 inch. A special machine is necessary for winding the new spring cables. This is now in course of construction and when this is received instructions will be issued to begin manufacture of the new release."

By Mr. Davis:

Q. 11. Now, I show you another slip with the mark 91a, dated August 13, 1917. Can you tell us what that is?

A. Note 91a, dated August 13th, specifies the orders on three different sized releases, on which this new model was to be applied or used.

Mr. Davis: I offer this slip in evidence.

(Pink slip No. 91a designated as Defendants' Exhibit No. 5.)

Mr. Davis: I will read this to the jury: "Referring to change note No. 91, dated July 19th, regarding new model cable release for the No. 2-7 inch, No. 13-3 inch, and No. 16-9 inch, special machine for winding the new spring cable has been received, and tool equipment completed, to make the new releases. The change takes effect as follows: No. 2—on 6561," and following that, in ink, "Foll. 6528 No. 13-Foll. No. 6529. No. 16-Foll. No. 6348."

I also now offer in evidence the first pink slip referred to, marked No. 91.

(Pink slip No. 91 designated as Defendants' Exhibit No. 6.)

By Mr. Davis:

Q. 12. Now, will you tell us how you find out from these pink slips, or from your system, what the change was that was authorized by the slip? How do you identify that change?

[fol. 121] A. The change authorized a change in the construction of a product. It usually meant the ordering of tool equipment, changing layout of operation sheets, and

specifying the order numbers on which the change was to take effect.

Q. 13. And those order numbers meant the orders for manufacture of the releases in which the change was to take effect?

A. Right.

Q. 14. So that this notation on the slip marked 91a, No. 2 on No. 6561 meant that the change was to take effect on Order No. 6561 for the manufacture of No. 2 releases?

A. Yes.

Q. 15. And then, by tracing through to that order for No. 2 releases, you can find out what drawings referred to that order number, is that right?

A. Yes. There is a list of parts prepared for each product, in this case each cable release would have a list of parts that made up that release, and the orders would be issued to the factory on the basis of that list of parts.

(Recess from 1 to 2 o'clock P. M.)

After Recess

WILLIAM H. ZIMMER, resumed.

By Mr. Davis:

Q. 16. Before luncheon, Mr. Zimmer, you referred to these pink slips 91 and 91a, which authorize the change of the innermost member of the release from straight wire to a closely wound wire coil, and it appeared that this set 91a referred to order No. 6561 as the order for No. 2 releases [fol. 122] on which this change should go into effect. Do your records show when these No. 2 releases with the change were first manufactured—the date of completion——

A. Yes, sir; we have a record showing the date issued and completed.

Q. 17. I show you a sheet of paper which is labelled "Cost Analysis No. 2, 7 cable releases," does that sheet show when the order was completed?

A. It shows when the order No. 6561, when it was ordered and when it was completed.

Q. 18. What date was it ordered and on what date was it completed?

A. Ordered on August 15, 1917, and completed November 9, 1917.

Mr. Davis: I ask that this sheet be marked for identification.

(Paper in question marked for identification Defendants' Exhibit No. 7.)

By Mr. Davis:

Q. 19. I want to come to the question of when the outer coil or facing was changed from a closely wound coil to a coil with open convolutions, and I show you pink slip No. 333. Did you issue that slip?

A. Yes, sir; that was issued by my department.

Q. 20. When?

A. April 27, 1918.

Q. 21. Can you read that slip to the jury?

A. Yes. "Change is being made in all of the spring casings used on our cable releases, same being open wound instead of close wound as at present. New Part lists are being written up for all the releases excepting No. 17 and 18, which are for Wollensock Optical Company. These new lists are to be used on all local orders for releases, the present lists being reserved for London orders only until [fol. 123] June 26, 1919, when we can safely ship the new releases to Europe without infringing on English patents. Great care must be exercised to see that any releases shipped to Europe before the date above mentioned have a close wound casing. Change takes effect on all new orders in works."

Mr. Davis: I offer that in evidence.

(Paper referred to marked Defendants' Exhibit No. 8.)

By Mr. Davis:

Q. 22. I want you to identify for us through your records the drawing that was used to build the parts in which that change was embodied, so that we can find out when the drawing was made and what change was made exactly in this open coil, and I hand you this yellow list. Will you tell us what it is and where it came from?

A. This yellow sheet is a list of parts to make one complete No. 2-7 inch cable release and it gives the various part numbers after the parts composing that release.

Q. 23. What is the date of it?

A. The date here is May 14, 1918.

Q. 24. Where did it come from?

A. It was prepared in my department through the operation of the previous pink note 333—in connection with that note.

Q. 25. Will you tell us by reference to that sheet what the drawing numbers, or what was the drawing number for the open coil casing?

A. This sheet calls for spring casing No. 15131, made of No. 30 brass wire.

Q. 26. That is the drawing 15131 that has been put in evidence as Defendant's Exhibit No. 3, which I now show you, is that right?

A. That is correct.

[fol. 124] Q. 27. Does that yellow sheet give the drawing number of the cable, that is the innermost member?

A. Yes, sir; that gives the number as 14511.

Q. 28. That is the drawing 14511 which has been put in evidence here this morning by Mr. Siegfried?

A. Yes, sir.

Q. 29. And which I now show you?

A. Yes, sir.

Mr. Davis: I offer in evidence the yellow sheet that the witness has been referring to.

(Paper above referred to marked Defendants' Exhibit No. 9.)

By Mr. Davis:

Q. 30. Now, will you refer back to this cost analysis sheet, which is marked for identification Exhibit No. 7, and locate on it the first order that was put through the works, embodying the changes of this pink slip No. 333, and tell us what that order number was and when it was put into work and when it was completed?

A. According to note 333 all of the orders after April 29th would have the new open wound casing. This sheet shows that order 7581 issued June 4, 1918, the first order after that date of April 29th.

Q. 31. When was that order completed?
A. It was completed December 20, 1918.

Cross-examination.

By Mr. White:

X Q. 32. Mr. Zimmer, what form is this yellow sheet on?
A. That is a part list, list of parts, which is prepared to manufacture camera works products.
X Q. 33. Is it designated by a form number?
A. A form number?
X Q. 34. Yes.
[fol. 125] A. It may have a form number; I don't just recall.
X Q. 35. Will you look and see, please?
A. (Referring to paper:) Form No. 140.
X Q. 36. In your organization what does Form No. 140 really mean—what is that?
A. That is a list of parts composing the product, containing the specifications of material, part numbers.
X Q. 37. It is a sort of master's specification, from which the various orders are made up?
A. Yes, sir.
X Q. 38. What is the date of that one?
A. May 14, 1918.
X Q. 39. That is for No. 2—7-inch cable release?
A. Yes, sir.
X Q. 40. I show you a photostatic copy of a similar form taken from your records, which is dated May 27, 1918. I will ask you if you recognize that as a photostatic copy of your list of parts on Form 140 for that same cable release about which you have just been speaking?
A. Yes, sir.
X Q. 41. How do you explain the fact, which appears to be the fact, that the one which I have just shown to you, which is dated six days later than the one which you produced, contains different specifications?
A. The difference here—one of the differences here is that I see a difference in the part number of the spring casing.
X Q. 42. What is the part number of the spring casing on the photostatic copy that you have in your hand?
A. 9507.

X Q. 43. I show you drawing 9507 and ask you if that is the drawing, a photostatic copy of it?

A. Yes, sir.

[fol. 126] X Q. 44. That shows a closed spring casing, and not an open spring casing, doesn't it?

A. Closed spring casing.

X Q. 45. I notice the yellow sheet you have in your hand seems to have a mark across it. What does that indicate, if anything?

A. You mean these red marks?

X Q. 46. Yes.

A. That means that on May 22, 1918, this sheet was discarded or became obsolete and a new sheet was written up.

X Q. 47. Then the new sheet that was written up is the one of which you have a photostatic copy in your hand, isn't it?

A. That is very possible.

X Q. 48. Why didn't you produce that, Mr. Zimmer, before this jury—why did you bring the one that has been discarded and not the one that was in effect?

A. I didn't know of this one.

Mr. White: I ask to have marked for identification drawing No. 9507, which has been identified by the witness.

(Drawing in question marked Plaintiff's Exhibit No. 39.)

By Mr. White:

X Q. 49. In view of this revised list of parts, it is a fact, is it not, that the subsequent orders for the No. 2 cable releases would follow this list of parts, which I have just handed you?

A. No, not necessarily.

X Q. 50. They would not follow the discarded list, of course, would they?

A. There may have been a new list, a revised list at that time.

X Q. 51. Do you know when the next revised list was put in, which did show an open spring casing surrounding a closed inner spring casing?

[fol. 127] A. No, I do not.

X Q. 52. Perhaps I can help you. I show you a photostatic copy of another similar record on Form 140 from your department, dated March 12, 1920, and ask you if

that is not a photostatic copy of a similar specification or list of parts for cable release No. 2?

A. Yes, sir.

X Q. 53. That is correct, isn't it?

A. It is correct for that date.

X Q. 54. Will you tell me what the drawing number is on that specification of March 20, 1920, for the outer spring casing?

A. 15131.

X Q. 55. I show you drawing 15131, which shows an outer spring casing. That is the drawing, is it not—a photostatic copy of it?

A. It is.

Mr. White: I ask that this be marked for identification.

(Drawing in question marked Plaintiff's Exhibit 40.)

Mr. Davis: That is already in evidence as Defendants' Exhibit No. 3.

By Mr. White:

X Q. 56. Mr. Zimmer, having in your one hand specification for parts No. 2, under date of May 27, 1918, showing the outer closed coil spring, and in your other hand a specification of March 20, 1920, showing the open spring casing, I will ask you whether or not it is a fact that that is the date when the open spring casing was adopted for use in connection with an inner closed spring casing by your company?

A. I can not say as to the exact date.

X Q. 57. Are you able to produce any specification or list of parts between those dates, which shows any different [fol. 128] or other arrangement of parts for cable release No. 2?

A. I am not sure whether we have any more lists here or not.

Mr. White: I ask to have marked for identification these two lists of parts or specifications for cable release No. 2, one dated May 27, 1918, and the other dated March 12, 1920.

(Lists in question marked Plaintiff's Exhibits Nos. 41 and 42.)

By Mr. White:

X Q. 58. Let me ask you this question—it is very clear from an examination of the list of parts dated May 27, 1918, and the drawing accompanying the same, is it not, that the spring casing used in the list of parts was a new spring casing shown by drawing No. 9507?

A. That is the number that appears on this list.

X Q. 59. It is quite clear equally that at some time in between that date and the date of March 12, 1920, a decision had been reached to put in a spring casing, such as is represented by drawing No. 15131—that is clear?

A. It is not clear to me.

X Q. 60. It is quite clear, is it not, that any cable releases under the No. 2 type, manufactured under the list of parts you have in your hand, would have a closed outer spring casing, would they not?

A. Yes, sir; any release manufactured under this specification.

X Q. 61. Any manufactured under the later specification would have an open spring casing?

A. Yes, sir.

X Q. 62. Then there must have been a decision in between those dates to make a change—do you agree to that?

A. Provided this is the official list.

[fol. 129] X Q. 63. Do you have any question about it?

A. I still think this is the correct list.

X Q. 64. You think the earlier date, which you said a moment ago had been discarded in May, 1918, is the correct list?

A. This one here?

X Q. 65. Yes.

A. Yes, sir.

X Q. 66. You choose that over the one later in date, which has not been discarded?

A. Yes, sir.

X Q. 67. May I see this yellow sheet? Have you any reason to suggest why the number opposite the word spring casing on this yellow sheet should be in lead pencil and all the rest in ink—that is true, isn't it?

A. It is true. When these lists were prepared, I might say, the original list of parts was prepared on a typewriter without any part number, on account of the number of releases which were manufactured, and then the part num-

bers were filled in later, in accordance with the various sizes.

Mr. Davis: Counsel asked if there were any more of these sheets in the intervening dates. I have spoken to my associates here and they have handed to me so far two, which I show you. The first one is dated 5/20/1918, and it shows that the spring casing sheet 9507, which is the closed coil casing, stricken out in pencil, and the number 15131 replacing it. And in the other, which is dated May 21, 1918, it shows that the cable releases complete, drawing No. 15132, which is the drawing which was put in evidence, and it shows release having an inside tiglitly wound coil and an outside loosely wound coil, and the number for the spring casing itself is 15131.

[fol. 130] By Mr. White:

X Q. 68. Do you know anything about this of your own knowledge, or simply from the records?

A. I would say from the records. That is too far back.

X Q. 69. Your counsel has just produced a similar form or list of parts, which has the same date as the one of which I handed you a photostatic copy, May 27, 1918, and which contains the same number 9507 for the outer casing, which is the closed coil. Do you know anything about how it happened that this was stricken out by lead pencil and another number written over it, before it was brought here?

A. No, sir.

X Q. 70. Did you have anything to do with giving a photostatic copy of that document, or a similar document, to Mr. Edelson, when he was in Rochester a few weeks ago?

A. No, I didn't see Mr. Edelson.

Mr. White: I call upon counsel for the original, if they have it, of this list of parts, which has just been marked for identification, dated 5/27/1918.

By Mr. White:

X Q. 71. Mr. Zimmer, your counsel has produced at my request the original copy of this document, of which I gave you a photostatic copy, dated May 27, 1918, six days later than the yellow sheet which you showed me. Why didn't

you produce this one instead of the other one which has been discarded, or didn't you know about it?

A. No, I didn't know about it.

X Q. 72. Having seen the two, are you prepared now to say that the earlier one is to be considered as the one in effect, rather than the other later one which you now have in your hand?

[fol. 131] A. This appears to be authentic enough.

X Q. 73. It is dated the 27th of May?

A. Yes, sir.

X Q. 74. It specifies the outside casing as No. 9509, does it not?

A. 9507.

Mr. White: I would like to have that marked for identification.

(Paper in question marked Plaintiff's Exhibit 43.)

Mr. Davis: I will ask that there be marked for identification a bunch of six of these yellow sheets, which were produced and handed to counsel for plaintiff, and among which are the two to which I referred.

(Six yellow sheets in question marked Defendants' Exhibit No. 10.)

By Mr. White:

X Q. 75. Mr. Zimmer, are there any statements or specifications, and if so I should like to have them produced, between the one dated May 27, 1918, and the one dated March 20, 1920, for No. 2 cable release?

A. I don't know of any other than these.

Newton M. Perrins, recalled.

By Mr. Davis:

Q. 6. Mr. Perrins, I hand you a letter, stamped Eastman Kodak Company, addressed to C. L. Jenks, main office, signed J. A. Robertson, dated April 12, 1916. Can you identify that?

A. I know the signature of Mr. Robertson.

Q. 7. Do you know where that came from?

A. That letter came from the files of the patent department of the Kodak Company.

[fol. 132] Q. 8. Is Mr. Robertson alive?

A. He is not.

Q. 9. Who is Mr. Jenks?

A. He was the head of the patent department. He resigned in 1916 or 1917, before I came to the company.

Q. 10. He is no longer with the company?

A. No, he is not.

Q. 10a. Do you know his whereabouts?

A. No, I do not.

Mr. Davis: I offer that letter in evidence.

(Letter above referred to marked Defendants' Exhibit No. 11.)

Mr. White: I have no objection.

(Defendants' Exhibit No. 11 read to the jury by Mr. Davis, as follows:

"Rochester, N. Y., April 12, 1916.

Mr. C. L. Jenks, Main Office.

DEAR SIR: Some time ago in discussing with you the cable release, situation, I explained to you the advantage of having an open flexible spring instead of a close wound one. I am sending you four cable releases, two long and two short. One of each is made with an open spring. Nobody will have any difficulty in determining which is which. I am also sending you sample of each of ehe springs.

I wish you would send these to J. T. Clarke and advise him that we are having a good deal of breakage and defective cable releases on account of the closely wound spring. Wish you would get his opinion as to whether we can safely manufacture them this way and send them to Europe. At [fol. 133] the same time, wish you would investigate whether we can make them in this country, and would like your advice on this just as soon as possible.

Very truly yours, J. A. Robertson.")

By Mr. Davis:

Q. 11. Do you know who J. T. Clark was?

A. Mr. Clarke was the patent representative of the Kodak organization in England and had charge of the patent affairs in England and European countries.

Q. 12. Before we go further with that English situation, I ask you if you can identify this letter, stamped Eastman Kodak Company, dated December 24, 1915, to Mr. C. L. Jenks, Main Office, signed J. A. Robertson, and tell us where it came from.

A. This came from the records of the patent department, and I recognize the signature of Mr. Roberts.

Mr. Davis: I offer that letter in evidence.

(Letter in question marked Defendants' Exhibit 12.)

Mr. White: I have no objection.

(Defendants' Exhibit 12 read to the jury by Mr. Davis as follows:

"Rochester, N. Y., Dec. 24, 1915.

Mr. C. L. Jenks, Main Office.

DEAR SIR: I am sending you herewith cable release in which the push cable is made of wound spiral coil, same as the casing. This is much more flexible than the cable we have in use. The suggestion came from one of our em- [fol. 134] ployees, Ed. Dakin, on August 13, 1915. We made up a thousand of these cables and they work satisfactorily.

I wish you would look this up and see if this feature is patentable or whether there is anything to prevent our using it.

You might also, as soon as possible, advise me on the chain proposition for the same purpose which I submitted to you some time ago.

Very truly yours, J. A. Robertson.")

By Mr. Davis:

Q. 13. Do you know, Mr. Perrins, whether a patent application was filed by Mr. Dakin, or by him and another, which illustrated a cable release having a closely wound spiral push cable and a closely wound casing surrounding it?

A. Yes, sir; one was filed.

Q. 14. That application was filed on what date?

A. Referring to this paper, it was filed on October 15, 1917.

Mr. Davis: It is stipulated by counsel for plaintiff that the application was filed in the Patent Office on October 15,

1917, and contained the same disclosure which is now filed in the patent, which is Patent No. 1,297,327, and which is offered in evidence.

(Paper last offered in evidence marked Defendants' Exhibit No. 13.)

Mr. Davis: It is further stipulated on behalf of the plaintiff that the patent disclosure is a disclosure of the structure of the cable release that was sent by the Eastman Kodak Company to Mr. Gray—is represented to be what they were manufacturing prior to the time he called attention to his idea.

[fol. 135] It is stipulated that the release which I now produce is one of the releases that was sent by Mr. Robertson to Mr. Jenks in the Kodak plant, with the letter of April 18, 1916, and of which he says, "one of each is made with an open spring." This cable release has wire inside. That is the straight wire, not the coil.

By Mr. Davis:

Q. 15. Mr. Perrins, I show you a letter, Eastman Kodak Company, December 12, 1917, addressed to Mr. G. A. Riggs, Camera Works, signed R. L. Stinchfield, and initialled N. M. P., and in pencil on it is written your name, Perrins. Can you identify that letter?

A. Yes. This is a letter which I wrote and initialled and Mr. Stinchfield signed, on the date given. Mr. Stinchfield was at that time the head of the department.

Mr. Davis: I offer the letter in evidence.

(Letter referred to designated as Defendants' Exhibit No. 14. It was read to the jury by Mr. Davis, as follows:

"Eastman Kodak Company

Rochester, N. Y.,
December Twelfth, Nineteen Seventeen.

Mr. G. A. Riggs, Camera Works.

Dear Sir: This is to confirm our conversation of yesterday concerning the proposed new metallic cable release. It was suggested that instead of having the outer coil or sheath wound closely for its entire length that a portion at or near each end be coiled more loosely with the convolutions spaced

one from another. This would give the advantage of the [fol. 136] separated convolutions at the points where the greatest wear comes and where the greatest need for flexibility exists.

The question of infringement remains the same in this country as it did at the time of the reports of Messrs. Church & Rich on Mar. 9, 1914 and July 14, 1916 when a tightly coiled sheath and a loosely coiled sheath, respectively, were discussed, and in each case it was held these could be made without infringement of the nearest U. S. patent No. 828,815. As long as this terminal spring in the present suggested structure is used purely as a sheath, this patent would not be infringed, as you stated this would not be used as the actuating spring for the button. If such a use were contemplated, this patent undoubtedly would be infringed, but we understand that this is not at all contemplated.

As to the infringement of British patent No. 13,157 of 1905, we are in considerable doubt. It will be recalled that the sheath closely wound throughout its entire length did not infringe any British patent, but that the sheath with separated convolutions throughout its entire length was considered to infringe this British patent. We would not care to state, with any degree of confidence, whether or not the new suggested sheath would infringe this British patent in which the claim states that 'the outer member consisting of a coiled wire is formed wholly *or mainly* with said coils other than touching one another on the abutting faces thereof.' In the suggested sheath the greater proportion of the length is closely wound, so in this sense it is not made 'mainly' with the separated convolutions. However, it is made with the separated convolutions at the places of the greatest importance, and we are unable to [fol. 137] state how this claim would be interpreted. This question will be submitted to Mr. J. Thacher Clarke. This particular arrangement is novel in this country, but the results obtained are so similar to that of the British patent that it is of doubtful patentability. However, if it is to be used commercially, it undoubtedly would be the part of wisdom to apply for a patent.

Summary

The proposed sheath does not infringe any U. S. patents. The situation as regards the British patent is doubtful

and will be referred to Mr. J. Thacher Clarke. If it is to be made commercially, a patent application should be filed.

Yours truly, R. L. Stinchfield, Patent Attorney.

Copy to Mr. Robertson.")

By Mr. Davis:

Q. 16. Now, Mr. Perrins, will you tell us what this question was that was to be referred to Mr. J. Thacher Clarke?

A. We had had under consideration for some time the making of a cable release with a loosely wound outer coil. Mr. J. Thacher Clarke had reported that it would infringe a British Edwards patent. Mr. Riggs asked me in a personal interview whether it would still infringe that patent if only a portion of the outer wire were made with the spaced convolutions, and this letter was in response to that suggestion, and we reported as stated that it would not infringe on the patents. But I did not know what it would be in England, and would refer the matter to J. Thacher Clarke.

[fol. 138] Q. 17. In other words, you reported that you could make that device with the loose coil sheath in the United States?

A. Yes.

Q. 18. Without infringing any United States patent?

A. Yes.

Q. 19. But when it came to selling them in England, there was a patent in England to Edwards which might be infringed by it?

A. That is true.

Q. 20. And what did Mr. Clarke report on that?

A. He reported that the British patent would not be avoided by this suggestion, that the suggestion would also infringe the British patent.

Q. 21. And the result of that was that the Eastman Kodak Company could not ship these cable releases with the open coil into England without infringing someone's patent in England, is that right?

A. That is true.

Q. 22. Did that have any effect on the policy of making the open coil sheaths in this country?

A. Yes, it did. It was brought up several times, and as we shipped products to all countries, we have to have a

uniform product that is free everywhere, so we postponed for some time the approval of that cable release.

Q. 23. That is, as I understand it, you wanted all your cable releases to be made so that you could ship any of them to any country without distinguishing, is that right?

A. That is correct.

Q. 24. And so, for that reason, you postponed what could have been manufactured in the United States without violating anybody's right, until it could be sold in England without violating the right?

A. That is what we advised them, yes.

[fol. 139] Q. 25. And when did that English patent expire?

A. I believe it was 1919. I am not absolutely certain. Can you give me the number of it? It was a 1905 patent, wasn't it?

Q. 26. It was a 1905 patent.

A. It would expire in 1919, then. A British patent has a fourteen-year term.

Q. 27. And after that British patent expired, the company was free to ship them into England and adopted the open coil, is that right?

A. That is true.

Q. 28. I call your attention to the pink slip No. 333, which has been put in evidence during the testimony of Mr. Zimmer, and I will read from it this sentence, "New part lists are being written up for all the releases except Nos. 17 and 18, which are for Wollensak Company. These new lists are to be used on all local orders for releases, the present lists being reserved for London orders only until June 26, 1919, when we can safely ship the new releases to Europe without infringing on English patents." Will you say whether or not that reference on this pink slip is to the British patent situation that you just described to the jury?

A. It was.

Cross-examination.

By Mr. White:

X Q. 29. Mr. Perrins, in order that there may be no error in the understanding of this matter, I will ask you whether it is not so that the cable which you sent, or which was sent to Mr. Jenks rather, by Mr. Robertson, in his letter of

December 24, 1915, was a cable which had a wire inner thrust member?

A. I believe it was, yes. It is right here.

X Q. 30. And in the letter of April 12, 1916, by Mr. Robertson to Mr. Jenks, where reference was made to a flexible instead of a close wound spring for the outer member, [fol. 140] that cable release also had a wire thrust inner member, did it not? That had a twisted wire thrust member and a closed coil casing, as I understand it?

A. They were both closely wound, yes.

Mr. Davis: It is stipulated between counsel that if Mr. H. F. Hoefle were called as a witness, he would testify that from the years 1907 to 1914 he imported into this country from abroad large quantities of cable releases known as the Watson or Watson and Edwards cable releases, which were manufactured in accordance with the disclosure of a British patent to Edwards and Watson which is numbered 5741 of 1906, and that the cable release produced is of the type which he imported during those years, and the cable release is offered in evidence.

(Cable release referred to designated as Defendants' Exhibit No. 15.)

Mr. Davis: The structure is a straight wire inner cable, what they call a stranded wire, not a coiled wire, with an open coiled outer casing. The jury will see that patent drawing later, and then I will recall it. I will offer two of these cables which were produced by Mr. Hoefle.

JOHN CHRISTY, sworn.

Direct examination.

By Mr. Davis:

Q. 1. Mr. Christy, you are employed by the Eastman Kodak Company at Rochester, New York?

A. I am.

Q. 2. In what capacity?

[fol. 141] A. General foreman in charge of drafting and experimental work.

Q. 3. How long have you been with them?

A. Since 1913.

Q. 4. Were you familiar with the type of cable release that they manufactured in 1913?

A. I was.

Q. 5. That cable release manufactured in 1913 is shown on this drawing No. 9511, and it has a straight wire push member and a closed coil casing, is that right?

A. That is right.

Q. 6. And it has a spring which is marked on the drawing 9499 for pushing the push button out to its extreme limit?

A. That is right.

Mr. Davis: I offer the drawing in evidence.

(Drawing No. 9511 designated as Defendants' Exhibit No. 16.)

By Mr. Davis:

Q. 7. Did you remain with the Eastman Company continuously from 1913 to date?

A. The latter part of December, 1917, I enlisted in the army, and was discharged and returned to work at Eastman Kodak in May of 1919.

Q. 8. When you went to the war, what type of cable release was the company manufacturing?

A. They were manufacturing the close wound outer casing and the close wound coil cable.

Q. 9. Before you went to the war they had substituted the close coil inner cable for straight wire cable?

A. That is right.

Q. 10. And when you came back from the war what were they manufacturing?

A. They were manufacturing the spaced open wound outer casing and the close coil cable.

[fol. 142] Q. 11. That is the present construction?

A. Correct.

Q. 12. Can you tell us the purpose and effect of these changes in the construction of the release?

A. Each change was an attempt to obtain a more flexible cable release.

Q. 13. That is the coiled push member or cable was more flexible than a straight wire cable, is that right?

A. It was.

Q. 14. And the open coil casing was more flexible than the closed coil casing?

A. It was.

Q. 15. I am going to call your attention to the British patent to Edwards, No. 5741 of 1906. Have you read that patent and do you understand it?

A. I have.

Q. 16. I am asking you to direct your attention particularly to Figure 2. That drawing Figure 2, is described in the printed specification of the patent, and that printed specification refers to each one of these reference letters that appear on the drawing; is that right?

A. Yes.

Q. 17. Is that patent and the thing illustrated in the Figure 2 a camera release for cameras such as we have been discussing here?

A. It is.

Q. 18. It is in fact the very camera release that is embodied in this exhibit, Defendants' Exhibit 15, that has just been offered in evidence, is it not?

A. It is.

Mr. Davis: This is a release of that patent described in the patent in England in 1906, made and shipped into this country, as has just been stipulated.

Mr. Edelson: That is the one having the wire cable?

[fol. 143] Mr. Davis: Yes.

By Mr. Davis:

Q. 19. Now, Mr. Christy, I am going to ask you to follow that drawing, and I am going to read to you the claim, the first claim of the plaintiff's patent, Mr. Gray's patent, and as I read each element of that claim, I want you, if you can, to point out and give the reference letter that applies to the corresponding element in this British patent.

The Court: Now, you are reading from which claim?

Mr. Davis: This is the first claim of the patent in suit.

By Mr. Davis:

Q. 20. The combination of two heads—that is the first element. Now, do you find those two heads in the British patent?

A. I do.

Q. 21. What are they on that drawing?

A. They are designated as capital A on one end and capital B on the other.

Q. 22. The next element is a barrel on the outer head. Do you find that in the Edwards patent?

A. I do.

Q. 23. What is it?

A. It is shown as small f.

Q. 24. It is a metal sleeve that is fastened to part of the outer head and lies inside of the flexible fabric casing and surrounds the short spring, is that right?

A. That is right.

Q. 25. The next element of the claim is a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel. Do you find that element in the Edwards patent?

A. I do.

[fol. 144] Q. 26. What is it?

A. It is shown here by the letter small g.

Q. 27. The next element is flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise. Do you find that in Edwards?

A. I do.

Q. 28. What is it?

A. It is shown as a small b.

Q. 29. That is the outer fabric casing, that is black cloth, in this exhibit?

A. That is right.

Q. 30. The next element is a stem extending slidably through one of said heads and having limited outward movement. Do you find that in Edwards?

A. I do.

Q. 31. What is it?

A. The Letter L.

Q. 32. One of the jurors says that you are wrong, that it is K. K is right. Now, do you find a slide member in the other of said heads?

A. I do.

Q. 33. What is that?

A. The letter L.

Q. 34. And then do you find "and means intervening said stem and said slide member from the transmission of endwise motion from said stem to said slide member"?

A. I do.

Q. 35. What is that?

A. That is the small letter i.

Mr. Davis: Now, if the Court please, that is all of the elements of claim 1 of the patent, identified in the Edwards patent of 1906, and I am now going to the second claim of the patent.

[fol. 145] The Court: That is the same as claim 1, element for element, excepting an additional element which is in claim 2 that is not in claim 1, is it not?

Mr. Davis: That is right.

The Court: Can you not limit that then?

Mr. Davis: Yes. That is what we are going to do.

By Mr. Davis:

Q. 36. The additional element in claim 2 is, "yielding means for normally holding said stem at its outer limit." Do you find that in the Edwards patent?

A. I do. It is shown as the small letter a with an x over it.

Q. 37. Then do you find, Mr. Christy, in this British patent to Edwards of 1906 the same elements that are claimed in claims 1 and 2 of the plaintiff's patent, arranged in the same combination, for the same purpose?

A. I do.

Q. 38. Now, I wish you would look at a German patent to Wermann, No. 147,572, of May 28, 1902. Look at the drawing of that patent. In the first place, is that device shown in Figure 1 a cable release for photographic cameras or is it not?

A. It is.

Q. 39. And the details of construction are shown in Figure 2 in cross-section; is that right?

A. They are.

Q. 40. Now, I am going to read what the patentee said about it in 1902 and ask you to follow it. I am reading from the patent. He says, "Devices for transmitting pressure are known in which a transmission member is led through a tubular, non-compressible but flexible guiding member." Now, I will ask you if you understand what he

means by the transmission member there? That is, what has it been called in this trial?

[fol. 146] A. We have been calling it the cable.

Q. 41. And that is the inner member that sometimes is made of straight wire and sometimes is made of a coiled wire; is that correct?

A. Correct.

Q. 42. Now, this patentee in 1902 goes on, "as a transmission member, a wire cable or a row of abutting pins have been used. In order to increase the precision of the operation of devices of that type, there is used in accordance with the present invention as the transmission member a non-compressible wire spiral which is arranged within the guide member." Now, can you point out to the jury on that drawing this non-compressible wire spiral which in this patent is used as the cable?

A. Yes. It is shown in the drawing on Figure 2 and is lettered with a small d.

Q. 43. Is there any difference, Mr. Christy, between that coiled wire cable for a photographic release shown in that patent and the coiled wire cables that have been testified to in this cage and that are embodied at present in the Eastman Kodak Company releases?

A. There is not.

Q. 44. Now, I call your attention, Mr. Christy, to another British patent, to these same inventors, Edwards and Watson; that is the British Patent No. 15,645 of 1905. Does that patent also refer to this same general type of cable release for photographic cameras?

A. It does.

Q. 45. I am going to read to you from that patent, beginning at line 17 of page 1 of the specifications, and ask you to explain the language. The language is, "The inner most member"—what does the innermost member mean there?

A. That is the part that we have been terming the cable?

[fol. 147] Q. 46. And the patentee says, "may be formed of one or more wire or wires or of stranded wires or of wires held together by wire coiled round them or a closely coiled spiral." Do you understand that?

A. I do.

Q. 47. What does it mean to you?

A. In one case it means simply a single strand of wire of a certain diameter, and in another case it means a

braided wire, where a number of wires are braided together. In another case it means a single strand of wire with a closely wound coil of wire about it, tied to it, and the last case, it means simply a closely wound coil.

Q. 48. That is such a closely wound coil as is embodied in the Eastman Kodak Company's releases of present manufacture charged to be an infringement?

A. That is right.

Q. 49. Do you understand this man to be saying here in 1905 that in these devices, any one of those forms of cable may be used as the maker chooses?

A. I do.

Q. 50. Now, will you tell us whether or not the release illustrated in the drawings of that patent of 1905 contains an open coil outer casing, and if so, direct our attention to the picture or the drawing which shows it.

A. They do show an open wound outer casing, designated by the small letter b.

Q. 51. That is of Figures 1, 2 and 3; is that right?

A. Yes.

Q. 52. So that if you did use, in a structure made under this patent or in accordance with its disclosure, a closely coiled spiral for the thrust member, you would have a structure in which there was a closely coiled spiral thrust member surrounded by a casing of open coiled construction, which in turn was surrounded by this woven sleeve of fabric; is that right?

[fol. 148] A. I would.

Q. 53. Now, in that patent of 1905, the patentee goes on from where I stopped reading to say, "and is attached at one end to a push button or push piece—for example, passed at one end into the sleeve or shank thereof and there secured by compressing or denting said sleeve at one or more points." Do you understand that?

A. I do.

Q. 54. Is it illustrated in the drawing of the patent?

A. It is.

Q. 55. Will you point that out and explain it to us?

A. It is shown on Figures 1, 2 and 3 by the small letter d 1, down at the bottom of the sheet.

Q. 56. Will you please say whether or not that is the method of securing the sleeve or tip at the end of defendants' cables to the cables?

A. It is.

Q. 57. That is, the Kodak Company uses this exact method of fastening on the tip that was shown in this patent in 1905?

A. They do.

Q. 58. Can you illustrate that to the jury by reference to this exhibit release that was sent by the Kodak Company to Mr. Gray in 1918?

A. It is shown on this release here in this case by two indentations.

Mr. Davis: Defendants' counsel produces X-ray photographs which it is agreed by plaintiff's counsel are X-ray photographs taken of the structure of the plaintiff's release, and showing this indentation.

By Mr. Davis:

Q. 59. Is this indentation which you just referred to as being on the release itself, is that shown in this X-ray photograph?

[fol. 149] A. It is.

Q. 60. Where is it shown?

A. On the right-hand side, looking at the print, the lettering at the top. On the right-hand side, about two and a half inches in from the end.

Q. 61. It appears as a slight indentation in the metal?

A. Yes.

Mr. Davis: That photograph is offered in evidence.

(Photograph referred to designated as Defendants' Exhibit No. 17.)

By Mr. Davis:

Q. 62. Will you tell us whether or not the tips in the defendants' release, that is those releases which are charged to infringe and which contain coiled wires, are made so that they can be adjusted in length or not?

A. They are not.

Q. 63. Tell us how they are fastened together at the factory, and illustrate it, if you can.

A. The close coil cable is wound in long lengths, six or eight feet long, and it is cut to a definite length for the particular size release that is to be manufactured. The ends are made on a screw machine and are drilled with a

hole in one end to a definite depth. These two are assembled together in a fixture, the head being placed in the fixture first and the cable being pushed into the hole as far as it will go, to the end of the hole, and then a tool similar to a prick punch being brought down to give it a blow and indenting the prick punch, embossing, on these two together.

Q. 64. And does that result in all of them being made the same length?

A. It does.

Q. 65. And is that a permanent fastening together or not?

[fol. 150] A. It is.

Q. 66. The things are shipped that way and are not adjusted in the factory at all?

A. They are not.

Q. 67. Now, do you want to have these cables of different lengths for different releases?

A. The cables are made of different lengths for different releases, yes.

Q. 68. That is, some releases require a cable of one length and some of a different length, is that right?

A. That is right.

Q. 69. How do you take care of that in the factory? Do you adjust these things to make them different lengths?

A. We do not. When an order for one length of release is issued, the drawing for that order shows it being made a certain length, and they are cut off a proper length before they are assembled.

Q. 70. Then suppose you want for some other releases a different length, what do you do?

A. Well, your drawing will call for the length of the cable which is to be used on that particular release, and it is cut to the length of that.

Q. 71. And that is fixed by this fixture that you speak of that is set up in the shop?

A. Yes.

Q. 72. And are the tips of these releases all the same length or different lengths?

A. We have several different designs of tips.

Q. 73. What is the occasion for that?

A. So they can be used properly in different types of shutters.

Q. 74. Do different types of shutters require a different length of stroke, is that the idea?

A. They require a different length of stroke, and in some cases the operating lever in the shutter is in a dif-
[fol. 151] ferent position in relation to the outside of the shutter case, requiring different lengths of ends.

Q. 75. Now, I have picked up from the table here two of these defendant's releases that were put in evidence. This is cable No. 2, and cable No. 25. Can you illustrate what you just said about the length of the tip by those two cables?

A. Yes, I can. On cable release No. 2 we have a long straight tip, and on release No. 25 they have a short tapered tip.

Q. 76. That is to adapt the length of the throw of the cable to different shutters on different cameras?

A. That is right.

Mr. Davis: If your Honor please, I offer in evidence the binder of the patents; that is, the United States patent to Edwards, No. 828,815; the patent to Duryea, No. 1,072,439, which was shown to the jury yesterday as having a screw threaded adaptable connection referred to by the patent office examiner; the Bacon and Underwood Patent No. 1,297,327, which was referred to this afternoon; the British patents to Watson and Edwards, Nos. 13,157 of 1905, 15,645 of 1905, and 5741 of 1906; and the German patent to Wermann, No. 147,572.

(Folder of patents referred to designated as Defendants' Exhibit No. 18.)

Cross-examination.

By Mr. White:

X Q. 77. Mr. Christy, in your testimony as regarding the claim No. 1 in the plaintiff's patent, you testified that you found each element in another patent?

A. I did.

[fol. 152] X Q. 78. The last sentence or clause in said claim reads, "and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described." Your counsel did not read those last words,

"substantially as described." Now, I will ask you to look at Mr. Gray's patent and see if that means is not described on page 2, near the bottom, in these words, which I will read to you: "This mechanism comprises two important features. One of these is the closely wound coiled wire transmission tube, J, connected with the stem F, and the slide member i, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, c, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, i, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner the inner tube, although closely wound, adapts itself to the bending without kinking." You find that as a description of the means mentioned in claim 1, do you not, in the patent?

Mr. Davis: I object to that, if your Honor please.

The Court: I think that is all right as far as he has gone.

Mr. Davis: If the question is merely do you find that as a description——

The Court: Well, you have asked him about certain elements. Now, Mr. White is calling his attention to the fact [fol. 153] that that element set forth in the claim is the same element substantially described.

Mr. Davis: I see your Honor's point. I withdraw the objection.

By Mr. White:

X Q. 79. You do find that?

A. I do find that.

Mr. White: What patent were you comparing this with? What was the name of it?

Mr. Davis: The Edwards patent of 1906.

By Mr. White:

X Q. 80. Now, will you tell us if you find in the Edwards patent the means described as I have just read to you?

Mr. Davis: I object.

The Court: I will have to sustain that objection, Mr. White. It does not matter what is in the description parts of his application. Unless and until it is translated into a claim, he gets no patent for it. Now, the first question I admitted, and that was, as I interpreted it, merely this, is the element which is described in claim 1 the element that is also described by the descriptive words which you read from the application, and I understand the witness to say yes, I understand those to be the same thing. Now the question is, as far as the patent goes, what is described in the claim, not what is something else.

Mr. White: If your Honor please, as I understand the law—and I am a little bit out of my element in the patent law, and I have to defer to my friend and rely a good deal on my associate—but I have been furnished with cases which rule that where in a claim a means such as this is [fol. 154] described in general terms but concludes with the words "substantially as described," and the description is a definite one, that that serves to limit the claim and frequently make it valid where it otherwise would be invalid.

The Court: Well, undoubtedly the words "substantially as described" must be given a meaning; but after all, the patented thing is what is in the claim.

Mr. Davis: May I call your Honor's attention to what the Supreme Court said about that in the Morgan envelope case? I will read the syllabus. It fits this case exactly. "Where the patentee has once presented his claim in that particular form, as this patentee did, and the patent office has rejected it and he has acquiesced in such rejection, he is estopped to claim the benefit of his rejected claim or such a construction of his claim in the subsequently issued patent as would be equivalent thereto. The principle is the same if the rejected claim be narrower than the one allowed." And in the opinion the court says, "It is insisted in this connection, however, that in the words 'substantially as described' the patentee is entitled to claim a band of oval or oblong shape, and that, looking at his specification and drawing in connection with the claim, it is obvious that the latter should be so limited; but the patentee having once presented his claim in that form and the patent office having rejected it and he having acquiesced in such rejection, he is, under the repeated decision of this court, now estopped to claim the benefit of his rejected

claim or such a construction of his present claim as would be equivalent thereto." (Citing cases.) "It is true that these were cases where the original claim was broader [fol. 155] than the one allowed, but the principle is the same if the rejected claim be narrower."

The Court: Well, that has become the understood law, that it is not what the man asks for but it is what he gets that controls. But for your purposes, what difference does it make? This witness has said that he understands the phrase that refers to this element in the claim to be exactly the same thing as he understands to be described in the application. So, if they are the same thing, what difference does it make? We are talking about mere words. The thing is the same, so you can address to that any question you please.

Mr. White: Well, my point was that in a case of this sort you read into the claim the description, and there is authority for that, if the Court please.

The Court: No; but substantially as described.

Mr. White: Yes, and therefore instead of just saying means, which you could not patent——

The Court: Well, the witness has already said that he understands that different language to refer to the same element. He has told us that. So what difference does it make in what words you describe it? You see, patents patent things; they do not patent words.

Mr. Davis: That closes our case.

Defendants rest.

[fol. 156] Plaintiff's Rebuttal

OFFERS IN EVIDENCE

Mr. White: I haven't anything to offer, if the Court please, excepting offering these exhibits that were identified during the evidence.

I offer in evidence the master specification of parts which has been identified as Plaintiff's Exhibit 41, the paper being dated May 27, 1918.

I also offer a similar document dated March 12, 1920, which has been identified as Plaintiff's Exhibit No. 42.

I also offer in evidence drawing No. 9507, which has been identified as Plaintiff's Exhibit No. 39; and drawing

No. 15131, which has been identified as Plaintiff's Exhibit 40; and I also offer original drawing identified by the witness Siegfried, No. 15132, which I ask shall be received in evidence instead of a photostat thereof which has been offered by the defendant.

(Original drawing No. 15132 referred to designated as Plaintiff's Exhibit No. 44.)

Testimony closed.

(Adjourned until December 12, 1931, at 10 o'clock A. M.)

[fol. 157] Third Day

Philadelphia, Pa., December 12, 1931, 10 A. M.

Before Hon. Oliver B. Dickinson, J., and a Jury

Present: Parties as before noted.

AGREEMENT RE DEFENDANTS' EXHIBIT NO. 1

It is agreed between counsel for plaintiff and defendants that the file wrapper, heretofore marked for identification as Defendants' Exhibit No. 1, shall be considered as offered in evidence.

CHARGE OF THE COURT

DICKINSON, J.:

Members of the Jury: This is the sort of a case that puts us upon our mettle, because it is an appeal not merely to our sense of fairness, but really to our good judgments. It is a controversy between business men, over a business proposition. There are in it none of those elements that sometimes, by an appeal to our feelings, jostle judgment from its seat. We can all take a cool-headed view of this question. Your selection as a jury in this case, I might say, is a very substantial compliment to you. I have been on this bench now approaching eighteen years, and this is the first time in my judicial experience in which a case of this kind has been submitted to a jury. I have inquired

of the court officials, and they tell me that it is the first time in the whole history of this court, running back, as it does now, very much more than 150 years. There have [fol. 158] been cases in which the simple question of damages has been submitted to a jury, but never a case, so far as I am informed, before in which the question of patent rights has been submitted to a jury. So, we can conclude from that that you have been specially selected as special experts upon these questions.

I have fallen almost into the habit of making a stereotyped and indeed trite suggestion to juries. It is this: you have a question to decide; before you start in to decide that question, get clearly in your minds what the question is that you are to decide. I think that will commend itself to the judgment of everyone. Let us see if we can get into our minds what the question is, or what the questions are, upon which you are to pass.

You know this case is what is commonly called a patent case, a case arising out of the claims of a patent. You all know the origin of the law of patents. It begins with the provision in our Constitution, and among the specially enumerated powers which are confided to Congress is that which authorizes them, for the purpose of promoting the progress of science and of useful arts, to grant for a limited time to authors and inventors the exclusive right to their respective writings and discoveries. In other words, they are given what is commonly called a monopoly, if they are authors, in the literary work which they have produced; if they are inventors, in the thing which they have invented. They have the exclusive right. No other person can make, use or vend without their consent the thing which they have invented, for which they hold the patent. Following this provision of the Constitution, patents have been authorized by an Act of Congress, and the language of that Act may be of some help to you; so I will try to quote it verbatim: "Any person who has invented or discovered any new and useful art, machine, manufacture or com- [fol. 159] position of matter or any new and useful improvements thereof, not known (that is theretofore known) or used by others, and not patented or described in any publication in this or any foreign country"—and so forth. Therefore you get the idea.

Now let me say this to you. The plaintiff in this case holds such a patent, regularly issued under the provisions

of this law, and we might think at first glance, "Well, that settles it; he has that exclusive right." There are some countries in which that is true, that when a patent is issued to a man, that gives him the exclusive right which I have outlined. But that is not our law. A man may hold a patent, but anyone who is interested and claims the right to make the thing, for illustration, which that patent covers, may challenge the rights conferred by that patent. There are several ways in which it can be done, and this is one, to challenge it by an appeal to a jury, to determine what we call the validity of the patent—they have a patent, but is it a valid patent?

In considering and approaching this question, you therefore take up that question first. The plaintiff in this case has a patent, and holds it, regularly issued. That gives him what is called the prima facie right to a monopoly in the making, using and selling of that thing—what lawyers call a prima facie right; that is, he has that right until and unless it be shown that he has not that right—and that is the purpose of your decision.

In nearly all of these patent cases there are two questions, among others. Usually there are three questions; but particularly two questions: first, what is called the validity of the patent—is this patent valid? That is one question, and you can see, logically, the first question.

The second question is, has that patent right been infringed? In other words, has anyone trespassed upon that [fol. 160] right by doing the thing, the exclusive right to do, which is vested in the holder of the patent? And so you have it here.

Now, when you are determining the validity of the patent, there may be, and very often is, a question which arises with respect to three features of that patent. You will have noticed in the language of this Act of Congress that one thing which is necessary is what is called invention—the man must have invented something. Another thing which you will have noticed is that the thing which he has invented must have what is called utility—it must be of some use. You all catch the significance of those two requirements. Now, understand, the man is given a monopoly, the exclusive right, to make money out of this thing to which he claims the right, and the law grants it to him first as a reward for the inventive talent which he

has displayed; and the people can afford to give him that reward, because the thing that he has invented is useful to the people who are interested in dealing in the matter which the patent concerns. So you see why those two things are required.

Now, there must be another element which enters into the question of the validity of a patent, and that is what patent lawyers call novelty—it must be a new thing, it must have originated with the man who made the claim, it must be something which was not theretofore known, not theretofore used, something a description of which did not appear in any publication or in any patent either in this country or any foreign countries. And you can understand why. No man could justly claim a monopoly in something that was in use beforehand. He would really be taking other people's rights in order to secure a right for himself, and obviously no law would justify him in doing it.

Another thing: if he sees a description in print or otherwise where he is told how to make something else, he can [fol. 161] not claim a monopoly in that by going and asking for a patent for it. Possibly he might get the patent. Why? Because it might happen that the officers of the Patent Office did not know of this previous publication; so, he might get a patent for it. But obviously his patent could have no real validity if all he did was to patent the ideas of somebody else. I am sure you get that clearly in your minds.

With that general thought before you, get right down to this case.

The plaintiff has shown the patent that gives him what I have told you is a prima facie right to the monopoly that he claims. He asserts that the defendant in this case has infringed, as patent lawyers call it, and that is that the defendant has trespassed upon the sole right of the plaintiff to make, use and sell the thing the right to make, use and sell which exclusively belongs to the plaintiff. He produces his letters patent and calls your attention to five claims, as they are called. Every patent must set forth in what are called claims the things upon which the patent is claimed. A patent may have several features, and therefore you have several claims; and the claims, as patent lawyers call them; which are in issue here, those upon which you are asked to pass, are five of the claims of this

patent; the first, second, third, fifth and sixth, if I have them accurately in mind.

Now what is the defense? The defense as to that patent, with respect to two of those claims, one and two, is that it is not a valid patent. Why? Because the very thing which is described in those claims appears in a patent which was issued in England, for illustration—(I think it was in England here)—the very thing, the defendants say, for which the plaintiff is claiming the right to a monopoly in this case is the very thing which has been described in that patent, and therefore your attention is called to it.

[fol. 162] As to the other three claims, the defense, as I have followed it, as to those claims, is this: that they are what is called combination claims—and you want to get clearly in mind what is meant by that. A combination claim means that the thing is made up of a number of features, or what patent lawyers commonly call elements. When you come to a description of it, you describe it by saying that it is this, it is that, and it is the other thing, and describe all the elements of it.

Let me say, in passing, as to that, that it is not necessary in these combination claims that every element in the combination shall be new. In point of truth, every one of them may be old. It is not the things that enter into these elements that are being patented, but it is the combination, and anyone who takes old things and puts them into a new combination, with the result that a new effect, a new result, a new utility, arises out of those elements having been selected and put together in that combination, has the right to a patent upon a combination, although, as I have said, every element which enters into that combination is old. A man may put together a number of old things and he may ask for a patent on them. He can not get it if that is all he has done. That is what patent lawyers call an aggregation, a mere putting together of a number of things without producing any new result as the outcome of their having been put together. That is just the distinction between an aggregation and a combination which I am sure you will appreciate.

The defense comes down, as I analyze it, really to these two propositions: with respect to claims 1 and 2, we say those claims are not valid. Why? Because the patentee did not originate what is described in those two claims;

he was not the original inventor of them, and has no claims to a patent, because they existed before the time he made [fol. 163] application for a patent. Now just a word upon that. This application was filed February 7, 1918. If we have no other light on the subject and we have not here, then you are to take it for granted that that was the date of the origination of the idea which is sought to be incorporated in a patent; and therefore we take it that the inventor (if it was a real invention) invented it on the date of his application, if the question gets into controversy. He is not bound by that date; he may prove that he invented it before he made his application; but if you know nothing else than that date, that is the date that you are to assume was the date of his invention—February 7, 1918.

Now, the defense interposed is that before that date this same thing was in existence. But they do not deny (and I will be corrected if I am wrong in this) that they used the thing which is described in claims 1 and 2. They say yes, we used it, and other people used it and it was known and in use before an application was made for this patent, and of course before the patent was issued. What it comes down to is this, that if the two claims of that patent are valid, we admit, to all intents and purposes, that we have infringed it.

And the defense is equally frank and candid and open with respect to the other three claims of the patent. They say, we have not infringed that patent. The combination we have used is the combination which is a different combination from that which is claimed in that patent. Now let me get that clearly in your minds. Here is a man who makes an application and receives a patent for something which, we will say, has in it nine of these elements, and a man wanting to use something in the same general line sees that he can use something which will answer all his purposes which is made up, not of a combination of those nine elements, but, we will say, of eight of them, or any [fol. 164] less number. He may use eight, seven, or any other number of those same elements that are used in the combination patent; but you will see that his combination is a different combination, and ergo he is not infringing.

Here is a man that invents something—a real invention. He describes it in his letters patent, and makes it very clear, and he has in it a certain number of elements, to use

the same illustration, nine. Another man comes along and finds that he can accomplish the same result by a different combination, of only three, or four, or five, or six of those elements. The man to whose invention the whole nine were necessary would have one combination, and the man to whom the other four or five elements were alone necessary would have an altogether different combination.

I have called your attention to the three elements—invention, utility, novelty. Invention, as I understand it, is not in real controversy here. So, you need not trouble yourselves about it. Utility is not in real controversy here, and you need not trouble yourselves about that. The question of the validity of the claims 1 and 2 in this case turns wholly, as this case has been presented to you, upon the third element, of novelty; was Gray the first one to make—to patent, of course—but to make the thing that is described in the first and second claims? That question has been very fully and ably and clearly argued, and I need do no more than direct your attention to it. You will recall the arguments that have been made.

Upon the other features, as I catch it, the whole question really turns upon that element in the combination which has that adjustable feature, in one or two of the claims, and the screw threaded feature in the other, and the real question is whether the defendant in this case has used that combination which the plaintiff has described in [fol. 165] those claims or whether it has used a different combination; whether, for illustration, he has dropped out of that combination something that was in it.

Now you come to the element upon which a good deal of stress was naturally laid in the arguments addressed to you, and that is what has been referred to as the doctrine of equivalents. Here is a man who has invented and patented something which has (and I will adhere to my old illustration) nine elements in it. I want to use it, and I see that I can substitute for one of those elements something else that produces practically precisely the same results, the same purposes. Now, you see what I have done. I have taken his combination and merely substituted for one or more elements in it something that is really the same thing, but in form or description it is something else.

If I have done that, I am guilty of an infringement of that patent. In other words, I can not escape infringe-

ment by merely changing the phraseology of the description of one of the elements in it, or changing the elements if the substitute that I introduce serves the same purpose, has the same function, and is in real truth the same combination as if I used the one described. I am sure you catch that point.

There is just one other thing I have to say to you, and that is as to the form of your verdict. When you are asked as to whether or not you have agreed upon your verdict, if your finding is in favor of the defendant—(now, understand, I am not intimating, or have no thought of intimating, what your verdict will be; I am only using this as an illustration, so that you will understand what you are to do)—if your verdict, for illustration, is in favor of the defendant, then, when you are asked whether or not you have agreed upon your verdict, your answer is, we find in favor of the defendant, and you need say no more. If, however, your judgment is otherwise, and you find that either claim [fol. 166] 1 or 2 is valid, or you find that there is an infringement of any one of the other three claims, and your verdict should be in favor of the plaintiff, then you have another question to decide, and that can be summed up in the two word question, how much? In other words, the plaintiff is entitled to compensation by an allowance of damages for the legal injury which has attended an infringement of his patent rights, and it is for somebody to determine how much a fair estimate of that damage reaches, and you are the somebody who must answer that question.

It is not necessary for me to remind you that in doing that you are dealing with a problem in dollars and cents. You are all practical men, and you know that if there is ever a time when a man needs the help of the best common sense he has in his possession, it is when he comes to be dealing with a matter of dollars and cents. Go at it with that thought in mind.

In that view of it, (I am not assuming by any means that that will be your view) the plaintiff would have a valid patent which had been infringed, and if course he would be entitled to be compensated for all the damages which he had suffered. Now how are you going to get at it? It is not an easy question, because you may look at it from a great many different points of view. But you have to

make the best estimate that you can. One estimate which it has been suggested that you may adopt is what is called the royalty estimate—what would be fair royalty if these parties were to come together for the purpose of settling by agreement upon a fair royalty for the use of this patented thing? What figure would they finally agree upon?

Of course, you can not establish that by evidence. They did not get together and they did not agree. They could not get together and they could not agree. Neither of them is to blame for it, because they differed upon the [fol. 167] fundamental proposition as to whether anything ought to be paid. But you are to imagine two men, equally disposed to be fair and reasonable, one the inventor of this patented thing, and the other a prospective user of it; the user saying to the patentee, I want the right to make and sell this thing which you have invented. Now, let us agree upon what a fair compensation in the form of a royalty might be.

Therefore you have had evidence along that line, as to what, in that view of it, a fair royalty would be. Of course, if you can get a unit figure upon which a royalty should be paid, then the only other question that you have is how many of these things were there? Therefore you have had what I understand is really an agreement upon that. The parties have agreed as to how many. So, your proposition is to determine what a fair royalty would be, in that view of it; but you are obliged to translate that into a round sum. You can not by your verdict say that this man ought to have a royalty of one cent or ten cents or any other sum. You have got to translate that into a sum of money for which your verdict may be.

So, there might be another view that might be taken of this. You can imagine yourselves as the party to a deal of that kind and if the patentee were to suggest a royalty, you might very well say to him, well, that is one way of getting at it, but if we have a royalty, I have got to keep a strict and accurate account of every one of these machines I sell, and I have got to keep a separate account of those that have this patented thing in them and those which do not have this patented thing in them, and it would be an expensive thing for me to do and a nuisance. More than that, it would be very easy for us to get into a dispute as to whether

I do keep the right account or not, and we might have all kinds of disputes about it. Let us fix this so that we will [fol. 168] have no dispute. What are you going to ask me for a license to use this, so that I can use it in as many of the cameras (for illustration) as I choose? Of course, I will sell as many cameras as I can, and I do not know how many I will sell, but in the course of the life of this patent, I may sell a million or two million or more; but what will you charge me right now, cash down, a round sum, for the right to use this? That would be another way in which you could get at it. I do not recall whether you have had any light in that phase of it or not. But, however, the appeal is made to you.

Take up, then, if that is the only one upon which you have had the help of evidence, the question of a royalty. How would you determine? Well, one thing which I assume would enter into it in your view, or the view of anybody, about it, is what is the commercial value of this thing which has been invented? If it has a large value, you would make your royalty larger, I assume, than you would if it had a small value. For how much can this thing be sold?

Now do not get the idea in your heads, when you are figuring upon that, that all a man has to do if he were making these things is to say, well, I can make them for twenty cents, and if I have a five-cent royalty to pay, I will add five cents, and that can then be sold for twenty-five cents. Things in this world of ours do not operate in that way, neither on the one side nor the other. If the conditions are such as what are called a seller's market, it works one way; if conditions are such that you have what is called a buyer's market, it acts in the other way. Here, for illustration, is something,—you are an importer; there is something that you can buy abroad for fifty cents—with cost of carriage, insurance, time and attention you give to it, and all that sort of thing, you figure fifty cents. You say, I can sell that in this country at a dollar, and you do sell it at a dollar, and that becomes the established price for that [fol. 169] thing,—it sells generally for a dollar; that is the understood price for it all along. Now it is proposed to levy a tariff upon that import, and we will say that is fifty cents. Anybody that figures that as the price before was a dollar and the tax is fifty cents, the thing will then sell for a dollar and a half, the chances are that he is fooled.

The importer who pays the tax says, I have advanced this money, and I am not going to advance it for nothing. I add fifty cents to the real cost of this thing to me. Before I was risking fifty cents on every one of them, and now I am risking a dollar on every one of them. I don't know whether I can sell them or not. Of course, I think I can and I hope I can, but it may be that I cannot, and I will be stuck for it. If it is a seller's market, mind you, when that thing gets upon the market, you will find that the new price, instead of being $1.50, is $2, or something more than that,—and it will always operate in that way. Now you come to the buyer's market, and something of the same thing happens. We will say a royalty,—a man has been making something with no thought of a charge for a royalty, and he has been selling it, we will say, at thirty-five cents. He pays a five-cent royalty, and it seems a very easy thing,—well, just add the royalty to your former price, and these things, instead of selling at thirty-five cents, will sell for only forty. But you are reckoning without your host, if it is a buyer's market. I go in and ask for one and say what is the price? Forty cents. Not on your life! I won't give you forty cents. I will do without it, unless I can buy it from you for thirty-five cents. Just such conditions as you have today.

Under a seller's market, the real price is all the traffic will bear. That is the only limit to it. Under a buyer's market, it is all the buyer will give, and that is all there is to that, and nobody yet found on this earth has been able to control that situation. You have your buyer's [fol. 170] markets and you have your seller's markets. You have your fat years and you have your lean years. They come and go, and the only sad thing about it is that they seem to come with celerity and certainty, and they are very sluggish in their movements to go.

All of those things must be taken into account.

I meant to have said a word to you, and perhaps I ought to say a word to you, upon this question of the validity of the patent. I do not know what is the best way of getting at this thing, but I will give you the result of my experience, and we have had quite a little of it, as we have frequently patent cases to try, and are obliged to try them without the assistance of a jury.

You have noticed in this case, of course, that I was asked to decide that question of validity myself, to have the

Court decide it. That is what was called a question of law, instead of submitting it to a jury. You noticed that I declined to do it. I said no, it is a question for the jury and not for the Court, because it is really a question of fact. Now you may be interested (most people would be) in knowing how does anybody tell whether a question is for the Court or whether it is for the jury? The answer is a very simple one and very easy to grasp. If the question raised is a simple one, so easy to answer that a ten-year-old child could answer it, or really even stronger than that; if it is the kind of a question that is susceptible of only one answer, that nobody but a fool would give other than one answer to it; if it is as plain a question as that, it is for the Court. But if it is a difficult question, and emphatically if it is a man's job, then it is for the jury.

You have got to take this question up and decide it. How are you going at it? I was about to say the result of my experience is that the best approach to a question of this kind is to ask, what was the state of, as patent lawyers call it, the prior art? That is, what was the condition of things [fol. 171] before this claimed inventor entered upon the field? Get that in your minds. Then what improvement was it that this man thinks he introduced into the art? Wherein did he help matters? Get that into your head. When you get those two things into your heads, really there you have come pretty close to understanding what that patent really is.

Now let us adopt that. What was the state of the prior art? What was the condition of things before this plaintiff entered upon it? Well, you will have to take it up by stages. The first state of the art, as I understand it, was this: we all understand that these cameras have in them what is called a shutter. There is a little lid opening there. When that is opened, the film is exposed to the light, and to the image of anything that may be presented to it. When that lid clamps down, it is shut off from the light, and of course it is taking no picture.

The old system was to have a rubber bulb and a rubber tube. You squeezed that rubber bulb, and it was really a pneumatic force that forced the air against this little shutter and opened it. When you took your finger off the bulb

and it came back, that pressure was released, and it was closed.

That had its disadvantages, which are obvious to all of you. You know, to begin with, that rubber is a thing that very easily deteriorates, and when it does it is very liable to crack and get out of service, and you can see other inconveniences in that thing. Now, somebody conceived the idea of substituting for that rubber tube these releases or cables, as they are called. Instead of having a rubber, have a wire. And then somebody discovered that the wire was very liable to bend, and when it bent to stay bent, which would interfere with its operation. So, he said, instead of having a straight wire, have a spiral, have a wire that is made up of windings or convolutions of wire, and then it will readily come back when it is bent.

[1 Ol. 172] The first idea I conceived, when this case was first introduced, without knowing really anything to which the patent pertained, was that what the plaintiff in this case claimed to have invented was this, that it was found that notwithstanding that a convoluted spiral rod had been substituted for the straight rod, either directly or having the spiral wound around it, whichever it was, even then it would what we call kink, and would get troublesome, and that he conceived the idea of having a larger spiral wire with the convolutions of wire further apart, to make it more limber and more flexible, to have that outside of this first wire. In other words, the first wire would become merely a tube for the second one, and this second one would operate to prevent the first one from what was called kinking or manifesting the other infirmities which made it undesirable. But the later developments of the case would make it very clear, as far as I understand (and I will be corrected if I am wrong in that) that the plaintiff did not mean that he was the originator of that idea, because it would very clearly appear that the idea of having these two spirals, we will call them, was in existence before he made his invention, so that his invention came down to the mechanism really which he has described in his claims, (I am speaking now particularly of claims 1 and 2) into the mode and manner of constructing the particular mechanism which he claims to have devised. I think that will give you all the light that I am able to give you to enable you to pass upon these questions, and I will reiterate:

First, you are to pass upon the validity of the claims 1 and 2, and your finding there is determined really by the fact which you will find as to whether or not the thing—now do not trouble yourselves with the idea of words, except as they give us an idea of the thing which they are meant to describe. The patent laws do not give a patent [fol. 173] on mere words, upon verbiage; you will see that it is a thing which a man has invented or made, and get your minds upon what that thing is, and pass upon it accordingly,—was that new to the plaintiff in this case? In other words, would this art have been without it except for the labors of this plaintiff? If it would have been, and the art owes to him that thing, then those claims are valid. If they are valid you may find infringement, because I do not understand that there is any dispute about it.

And the second question, of whether or not the three other claims of the patent have been infringed. And that turns upon the proposition that is submitted to you, that the defendants were not using that combination, and more than that, as I recall, the thing that they were using was in itself a patentable thing; that they had taken a patent for what they were using, and that patent was at least applied for, and I assume was issued, before the plaintiff made his invention in this case.

Now, you see, it would be absurd to say that the defendant was guilty of an infringement of this patent if he was using it before the plaintiff's patented thing was invented, because it has passed into an adage, not of law, but of common sense, an adage of a logical result, that if anything is an infringement of a patented article, then it is an anticipation of the patent, if it was in use before the patentee of the article invented that thing for which he was given a patent.

I think I have covered all the points submitted to me. So far as affirmed in the general charge, they are affirmed. So far as not so affirmed, they are disaffirmed, and exceptions are allowed accordingly. But if there is any particular point which counsel ask to be specifically answered, I will answer it, unless I have already done so; and I suppose the stenographer's notes may show the usual agreement entered into by counsel in the trial of these cases.

[fol. 174] Mr. White: Your Honor, there is only one thing: in your last reference, to the defendant's patent, the

Dakin patent, it did not include an open spiral outer ring; it was a closed outer ring and a closed inner ring.

The Court: That is right. I overlooked that.

Mr. Davis: In the same reference, your Honor said that if the patent was filed or issued before the date of the plaintiff's patent, and your Honor said you assumed it was issued. Now, as matter of fact, it was not issued before, and that might confuse the jury.

The Court: That is the reason I qualified it. I did not know whether it had been or not. But the application date, as I recall it, was in October previous.

Mr. Davis: 1917.

The Court: Yes.

Mr. Davis: So that the jury will understand.

The Court: Yes. I think I made that clear. I said if it was before the patent, all right; but if the patent had been issued before the plaintiff's application, all right; but whether it had been or not, the fact that the application was made proved that the defendant had that thing then, whatever he described in his application. I think I made that perfectly clear to the jury.

Mr. Davis: I hesitate to go any further on this charge, but there was a remark in the early part of it that seemed to me might be misleading. Your Honor said, perhaps in illustration, if the patentee had seen an earlier publication.

The Court: I did not use that expression.

Mr. Davis: If you will instruct the jury that if the publication existed,

The Court: I will.

Mr. Davis: That is, whether he had seen it or not.

[fol. 175] The Court: I will. I did not use the expression, if he had seen it. I know what you have in mind, but that was said in another connection. But I will change that. I will make that clear. Anything else?

Mr. Davis: Only perhaps to repeat what you already said the other day to the jury, that this suit is not brought for profits and profits cannot be recovered.

The Court: I will make that clear.

Now, members of the jury, I had in mind to say to you, and I am quite sure it slipped my mind and I did not say it, with respect to novelty, anticipation, and these other phrases that patent lawyers apply to it, what it means is this, that the idea was abroad, in existence and abroad, to

a greater or less extent, before the patentee of the patent in suit claimed to have invented it; in other words, before he asked for a patent.

The theory of law is that the patentee and everybody else had seen this publication, for instance; but that is a mere theory and does not affect the real question. He may not have seen it. In point of fact, if any of you are interested in this subject by being yourselves inventors, you have no doubt found out what is the very common experience. A man thinks he has invented something, and he thinks it is a pretty good thing, and he rushes to the Patent Office to have it patented, and lo and behold! he discovers any number of patents on the very same subject, and the thing that he thought was new was as old as the hills. That is a very common experience. So, get out of your minds that it is necessary to the finding of invalidity on the ground of want of novelty that the plaintiff must have been trying to perpetrate a fraud by passing off something which he knew was not his. That is not the idea at all. The idea is simply this, was it new? And if it had been already in use by other people, or if it was described in any publication or in any patent, then it is clear that it [fol. 176] was not new, and it does not matter whether the patentee whose patent is in suit thought it was new or whether he did not.

With respect to the other question, some of you may be familiar with the ordinary forms of litigation in cases of this kind, and if you are, you doubtless encountered this, that in the cases of which you knew, a defendant was called upon for what is called an accounting for profits; in other words, he had to account to the patentee whose patent was infringed for all the profits that he had made out of the manufacture of that patented thing, and had to account for them all. Now get this clearly in your minds, that we have nothing to do with the profits in this case, in this kind of a case. We have nothing whatever to do with profits. What you are concerned with is the damage which the patentee suffered, if any—if his patent is valid, of course, and infringed—what damages he suffered, what loss he met with, and not what profits may have been made out of the sale of this in combination with cameras or by themselves, for that matter. Now just keep that in mind. You are not making an accounting for profits.

The original idea was that this case would be concluded last night, so that you would have the whole day before you in which to dispose of it. It is now nearly three o'clock. I want again to consult your convenience by asking you whether you would prefer to take this case tonight or whether you would prefer to come back on Monday morning. Now, understand, there will be nothing further to say to you, but merely the formality of committing the case to you; but if I commit it to you tonight, you will have to stay together until you have agreed upon your verdict; and you may come back Monday morning and you will have the whole day in which to dispose of it.

[fol. 177] Mr. Davis: I will ask your Honor for the allowance of an exception to the denial of the directed verdict, so that that may appear on the record.

The Court: Yes, to make that clear, the record may show that the point asking for a directed verdict is denied without reading, and an exception is allowed to the defendants.

Mr. White: Would your Honor mind telling the jury that that Dakin patent gotten by the defendant did not disclose the plaintiff's invention?

Mr. Davis: How can he do that?

Mr. White: Well, we were just talking about it, and I understood your Honor assented to my statement that the patent was not the defendant's disclosure; but my associate was afraid that you did not make it clear to the jury. In your charge you said that the defendant had applied for a patent on the same thing that we had.

The Court: I would not like to tell them what was in that patent, because I haven't seen it.

Mr. Edelson: If your Honor please, what is meant is this: you said that a test of anticipation was this, that if a thing infringed if later it was anticipation if earlier, and all that we want you to do is instruct the jury that we deny that the Dakin patent is an infringement, that that structure is an infringement.

The Court: If you can agree on that.

Mr. Davis: I have no objection to your telling the jury that the other side deny that this Dakin patent is an infringement, if that means anything.

Mr. Edelson: We do not claim it is, because it has a closed outer coil and a closed inner coil.

The Court: Then, members of the jury, since you prefer to return Monday, you are relieved until Monday morning at ten o'clock. Now you understand there will be nothing [fol. 178] except the formality of submitting the case to you and letting you dispose of it.

Let me say this—not because I have any thoughts that it would be necessary to say it to you, but I want to say it to you for your own protection—of course, you will not discuss this case with anyone, and not permit anyone to discuss it with you. I say that for your protection. If any over-zealous person should approach you and want to discuss it, you can say to him that the Court has directed you not to discuss it, and if he persists in it after that, you report him to me, and I will take care of him after that.

It was agreed and stipulated by and between counsel for the respective parties that if the Court should not be in session when the jury returns with their verdict, the Clerk of the Court may take the verdict with the same force and effect as if it were taken in open court; that if the jury should return for further instructions, the Court may give the jury further instructions in the absence of counsel, with the allowance of an exception to each side to what is said; and that if there are any exhibits or papers which the jury desire to have sent out to them, they may be sent out.

Counsel for plaintiff and defendants requested the learned Judge to direct the stenographer to reduce the notes of testimony and charge of the Court to typewriting and file the same of record in the cause, which request was granted and the stenographer so directed.

Defendants' Points for Charge

"1. That the right of the plaintiff to recover damages, if any, rests upon what he claims as his invention in the numbered paragraphs at the end of his patent. There are six of these numbered paragraphs or claims, introduced [fol. 179] by the words 'I claim as my invention:'. In this suit the plaintiff bases his claim on paragraphs numbered 1, 2, 3, 5 and 6. You are not to consider paragraph numbered 4 on page 3 of the patent. The plaintiff makes no claim under that paragraph.

"2. The first numbered paragraph (claim 1) on page 2 of the patent defines a cable release having the following elements in combination:

(a) 'Two heads'—these are the two enlargements, one at the inner end of the flexible tube for attachment to the camera and the other at the outer end of the tube forming the finger grip for the press button.

(b) 'A barrel on the outer head'—this is the metal sleeve or barrel, marked 'A' on fig. 1-a of the patent, which is screwed into the outer head and lies inside of the fabric tube D and surrounds the short spring marked G.

(c) 'A coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel'—this is the coiled spring casing marked C that runs the whole length of the flexible tube and the outer end of which loosely surrounds and engages the reduced inner end of the sleeve or barrel A.

(d) 'Flexible means joining said heads and definitely holding them a fixed distance from each other while said spring wire tube is partially compressed endwise'—this is the fabric tube marked D.

(e) 'A stem extending slidably through one of said heads and having limited outward movement'—this is the slide or push button marked F associated with the outer head.

(f) 'A slide member in the other of said heads'—is the slide member marked I on fig. 1-b of the patent, associated with the inner head.

[fol. 180] (g) 'And means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member'—this is the coiled wire tube J which connects the stem with the slide member and transmits endwise motion from one to the other. It is here claimed as an element of the patented combination without regard to its particular form, whether a coiled wire tube or a straight wire, so long as it connects these two slidable parts and serves to transmit endwise motion from the stem or push button at the outer head to the plunger or slide member at the inner head.

"3. The second numbered paragraph (claim 2) of the patent has the same elements as claim 1, and in addition thereto it has:

(h) 'Yielding means for normally holding said stem at its outer limit'—this is the short coiled spring marked G on fig. 1-a of the patent.

In this claim it is also required that the means intervening between the stem and the slide member for the transmission of endwise motion shall be 'joined' to the stem and to the slide member.

"4. In considering these two claims you are not to disregard the broad language 'means intervening said stem, etc.' and you cannot restrict its meaning to a coiled tube so as to exclude from it a straight wire used instead of a coiled tube. If you find in any of the earlier patents in evidence this same combination of elements in a release mechanism for photographic cameras, you must find that claims 1 and 2 of the plaintiff's patent are void for want of novelty, whether the intervening means between the slide member and the stem in such earlier patent, is a coiled wire tube or a straight wire.

[fol. 181] "5. The defendants assert that this combination of elements is found in the British patent to Edwards & Watson, No. 5741 of 1906, and partially illustrated in Figure 2 of that patent. In this Figure 2 of the Edwards' patent, which illustrates a release mechanism for photographic cameras, there are the following elements:

(a) 'The two heads'—the outer head constituting the finger grip of the press button and illustrated at the left hand end of the figure A, and the inner head illustrated at the right hand end of the figure at B.

(b) 'Barrel on the outer head'—this is the metal sleeve or barrel marked f on the drawing, which lies inside of the fabric tube of casing marked b, and surrounds the short spring marked a'.

(c) 'A coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel'—this is the coiled spring marked g that runs the whole length of the fabric tube and loosely surrounds and engages the inner cup-shaped end of the sleeve or barrel f.

(d) 'Flexible means joining said heads and definitely holding them a fixed distance from each other while said spring wire tube is partially compressed endwise'—this is the fabric tube marked b.

(e) 'A stem extending slidably through one of said heads and having limited outward movement'—this is the slide or push button marked k associated with the outer head.

(f) 'A slide member in the other of said heads'—this is the slide member marked l associated with the inner head.

(g) 'And means intervening said stem and said slide member for the transmission of endwise motion from said [fol. 182] stem to said slide member'—this is the straight twisted wire marked i which connects the stem with the slide member and transmits endwise motion from the stem at the outer head to the slide member at the inner head.

"6. This Edwards & Watson patent structure contains all of the elements of claim 1 in the same combination and for the same purpose, and you must therefore find that claim 1 of the plaintiff's patent is void for lack of novelty because of this earlier patent to Edwards & Watson.

"7. In this figure 2 of the Edwards & Watson patent there is also:

(j) 'Yielding means for normally holding said stem at its outer limit'—this is the short coiled spring marked a'. And in this construction of the Edwards & Watson patent the intervening wire i is 'joined' to the stem and to the slide member.

"8. This Edwards & Watson patent structure contains also all of the elements of claim 2 of plaintiff's patent in the same combination for the same purpose, and you must therefore find that claim 2 of plaintiff's patent is void for want of novelty because of this earlier Edwards & Watson patent.

"9. The other three claims of plaintiff's patent (the paragraphs numbered 3, 5 and 6) have to do with the matter of adjustable connection of the inner tube j to the stem at the outer head and also to the slide member at the inner head:

(a) Claim numbered 3 requires that the 'intervening means' shall 'adjustably surround' said stem and also said slide member.

[fol. 183] (b) Claim numbered 5 requires that this 'intervening means' shall be in the particular form of 'a coiled

wire tube' and that it shall be 'adjustably joined' to the stem and to the slide member.

(c) Claim numbered 6 requires that this 'intervening means' shall be in the particular form of a coiled wire tube and that it shall be 'threaded' to said stem and to the slide member.

"10. Defendants assert that it does not infringe these three claims, or any of them, because it does not have in its releases any adjustable connection. You are to inquire whether in defendants' releases there is an adjustable or threaded connection of the intervening coiled wire tube to the stem at one end and also to the slide member at the other end for the purpose of varying the reach or length of the thrust member. If you find that in defendants' releases these parts are connected in a manner which is not intended to be adjustable, you must find that these three claims numbered 3, 5 and 6, and each of them, is not infringed. It is not enough to constitute an infringement for you to find that these parts can be forcibly separated if you find that it was not intended by the defendants that they should be adjusted.

"11. Defendants further assert that these claims of plaintiff's patent numbered 3, 5 and 6, and each of them, is void because it does not require invention to connect parts of any mechanism to one another by screw threads for the purpose of making the parts adjustable. If you find that it was within the skill of an ordinary mechanic to connect two parts to one another by screw threads, so that they might be adjustable with respect to one another, then you must find that these claims are void for lack of invention.

[fol. 184] "12. Defendants submitted in evidence United States Patent to Duryea No. 1,072,439, which shows at 10 and 11 on Fig. 2 such a screw threaded, adjustable connection for connecting the two ends of the thrust member to the handle lever 6 at one end and to the associated member 8 at the other end, as shown in fig. 1. You must assume that the disclosure of this Duryea patent was known to the plaintiff, and you must inquire whether, with the knowledge of that patent, it would require invention, i. e., more than ordinary mechanical skill, for the plaintiff to connect the parts of his device by a like screw threaded adjustable connection.

"13. Defendants assert that each of claims numbered 3, 5 and 6 of plaintiff's patent is void for lack of novelty, or must be so construed as to exclude defendants' construction, because of the British patent to Edwards & Watson No. 15,645 of 1905, in evidence. That patent says at page 1, lines 17 to 24, inclusive, and again at page 4, lines 10 to 17 inclusive:

'The innermost member may be formed of one or more wire or wires or of stranded wires or of wires held together by wire coiled around them or a closely coiled spiral and is attached at one end to a push button or push piece—for example passed at one end into the sleeve or shank thereof and there secured by compressing or denting said sleeve at one or more points—this push button or push piece being adopted to slide within or otherwise operate in conjunction with the first named sleeve to which uttermost member is attached as aforesaid.'

Defendants assert that this is the way in which the stem and the slide member respectfully are secured to the intervening coiled wire tube of defendants' releases. If you find that in defendants' releases the stem and the slide [fol. 185] member respectively are secured to the coiled wire tube in this way, then you must find that these claims numbered 3, 5 and 6 respectively of plaintiff's patent are void or that they cannot be interpreted to include defendants' structures as an infringement.

"14. It has been represented to you by the plaintiff that he has a patent for a release for photographic cameras in which the inner thrust member is in the form of an incompressible spiral coil surrounded by an outer spiral coil, the convolutions of which are in open or spaced relation, and in which the outer coil is held in partially compressed condition by means of a substantially inextensible outer jacket of fabric material. The claims of the plaintiff's patent do not cover or give him a patent for that combination of elements. In claims 1 and 2 the inner thrust member is defined broadly as 'means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member'. This language cannot be restricted to an intervening means which has the particular form of an incompressible spiral coil. In claims

3, 5 and 6 the adjustable connection is introduced and you are not at liberty to disregard it.

"15. Defendants contend and plaintiff has admitted that when plaintiff first applied for his patent to the Patent Office, he presented a claim numbered 17 for that combination of elements in which the inner thrust member is in the form of an incompressible spiral coil surrounded by an outer spiral coil, the convolutions of which are in open or spaced relation, and in which the outer coil is held in partially compressed condition by means of a substantially inextensible outer jacket of fabric material. Defendants contend that that claim was rejected by the Patent Office on the ground that it was not patentable and that the plaintiff cancelled and gave up the claim. It appears from paper No. 1, [fol. 186] page 13 of the 'File Wrapper Contents' of plaintiff's patent in evidence, that such a claim was presented. It appears from paper No. 2, pages 19 and 20 of that document that the claim was rejected by the Patent Office on the ground that it was not patentable. It appears from paper No. 5, page 27 of that document that the claim was cancelled. You must therefore find that the plaintiff gave up the claim, and that his patent does not cover or give him the right to the exclusive use of that combination.

"16. Defendants contend that claim 17 appearing on page 13 of the 'File Wrapper Contents' in evidence, and claim 20 appearing on page 14 of that document respectively, were identical with claim 1 of plaintiff's patent, and with claim 2 of plaintiff's patent, respectively, with the single exception that they define the 'intervening means' as a 'coiled wire tube.' Upon direct comparison that appears to be the fact. Both of these claims were rejected by the Patent Office on the grounds that they were not patentable and both were cancelled by the plaintiff. Because of this you are not at liberty to construe claim 1 of plaintiff's patent, or claim 2 of plaintiff's patent, as though the 'intervening means' were defined as 'a coiled wire tube.'

"17. Defendants contend, and it appears from direct comparison to be true, that claim 5 of plaintiff's patent is identical with claim 17 as originally presented to the Patent Office, with the single exception that in claim 5 the words 'adjustably joined' are added. Claim 17 was rejected by the Patent Office on the ground that it was unpatentable and

it was cancelled by the plaintiff. Because of this you are not at liberty to ignore the limitation of claim 5 to a structure in which the coiled wire tube is adjustably joined to said stem and to said slide member, or to find infringement of claim 5 of plaintiff's patent by a structure in which [fol. 187] the coiled wire tube is not 'adjustably joined' to said stem and to said slide member.

"18. Defendants contend, and direct comparison shows it to be true, that claim 6 of plaintiff's patent is identical with claim 18, as originally presented to the Patent Office, with the single exception that where claim 18 defined the coiled wire tube as 'joined tube' to said stem, claim 6 of the patent defines the coiled wire tube as 'threaded tube' to said stem and to said slide member. Because of this you are not at liberty to ingore the limitation of claim 6 to an arraingement in which a coiled wire tube is threaded to the stem and to the slide member, or to find infringement of this claim by defendants' structures, if you find in them that the coiled wire tube is not threaded to the stem and also to the slide member.

"19. Defendants contend that the use of an incompressible spiral coil as a thrust member of a photographic camera release was disclosed in the German Patent to Werrmann, No. 147,572, marked d in Fig. 2 of that patent, and that from the date of the German Patent, which is May 28, 1902, the use of such an incompressible spiral coil in camera releases in place of a straight wire was a known expedient available to be used by any one who desired to use it in the United States, and that because of this it did not require invention; or involve infringement of plaintiff's patent, for the defendants to substitute such an incompressible spiral coil for a straight wire thrust member, such as plaintiff admits to have been in use prior to plaintiff's invention. If you find in this German patent such an incompressible spiral coil used as a thrust member in a camera release, you must find for the defendants.

"26. It appears from German Patent No. 147,572 of 1902 to Werrmann, in evidence in this case, that a coiled [fol. 188] wire tube thrust member was a known mechanical equivalent of a straight wire thrust member in a release for photographic cameras before plaintiff's supposed invention, and you must so find.

"21. It appears from Edwards British Patent No. 15,645 of 1905, in evidence in this case, and particularly from the statement at lines 17 and following of page 1, and again at lines 10 and following of page 4 thereof, to wit:

'The innermost member may be formed of one or more wire or wires or of stranded wires or of wires held together by wire coiled around them or a closely coiled spiral'

that a closely coiled wire thrust member was, before plaintiff's supposed invention, a known equivalent of a straight wire thrust member in a photographic cable release in which the outer thrust member is surrounded by an outer spiral coil, the convolutions of which are in open or spaced relation (*b* of Figs. 1, 2 and 3 of the British Patent) and in which the outer coil is held in partially compressed condition by means of a substantially inextensive outer jacket of fabric material (*c* of the British Patent); and you must so find.

"22. Defendants assert that before plaintiff's supposed invention a coiled wire tube thrust member was a known mechanical equivalent for a straight wire thrust member in a release for photographic cameras, and that before his supposed invention plaintiff had knowledge of releases which differ from his release only in the use of a straight wire thrust member instead of a coiled wire thrust member. If you find these things to be true, you must bring in a verdict for defendants.

"23. It appears from the evidence (particularly from the United States Patent to Edwards No. 828,815, and also [fol. 189] the British Patents to Edwards No. 13,157 of 1905, No. 15,645 of 1905, and No. 5741 of 1906) that prior to plaintiff's supposed invention an outer spiral coil, the convolutions of which are in open or spaced relation, was a known equivalent in camera releases of an outer spiral coil having its convolutions wound in contact with one another, and you must so find.

"24. Defendants assert that, before plaintiff's supposed invention, an outer spiral coil, the convolutions of which are in open or spaced relation, was a known mechanical equivalent of an outer spiral coil, the convolutions of which are wound in contact with each other, and that the evi-

dence shows that before plaintiff's supposed invention, the defendant, Eastman Kodak Company (of New York), was manufacturing cable releases identical with the cable releases relied upon in this case as infringements except that the outer spiral coil was wound with its convolutions in contact with one another instead of in spaced relation. If you find these two things to be true, you must bring in a verdict for defendant.

"25. The combination, in a cable release, of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel; flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compresesd endwise, a stem extending slidably through one of said heads and having a limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member from said stem to said slide member was described in Edwards' British Patent No. 5,741, of 1906, in such full, clear and exact terms, as to enable any persons skilled in the art of making cable [fol. 190] releases to make and use an invention so described without the exercise of more than mechanical skill.

"26. Claim 1 of plaintiff's patent is void.

"27. The combination, in a cable release of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member was described in Edwards British Patent No. 5,741 of 1906, in such full, clear and exact terms, as to enable any persons skilled in the art of making cable releases to make and use an invention so described without the exercise of more than mechanical skill.

"28. Claim 2 of plaintiff's patent is void.

"29. Claim 3 of plaintiff's patent is void.

"30. Claim 5 of plaintiff's patent is void.

"31. Claim 6 of plaintiff's patent is void.

"32. There is no evidence that the defendants, or any of them, made, used or sold, during the period beginning June 9, 1924, and ending June 9, 1930, any cable release having as an element of its structure means intervening and adjustably surrounding the stem and slide member for the transmission of endwise motion from said stem to said slide member of said release.

[fol. 191] "33. There is no evidence that the defendants, or any of them, made, used, or sold, during the period beginning June 9, 1924 and ending June 9, 1930, any cable release embodying the combination of two heads, a coiled spring wire tubing having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and adjustably surrounding said stem and said slide member for the transmission of endwise motion from said stem to said slide member.

"34. Claim 3 of plaintiff's patent is not infringed.

"35. There is no evidence that the defendants, or any of them, made, used, or sold, during the period beginning June 9, 1924 and ending June 9, 1930, any cable release having as an element of its structure a coiled wire tube intervening and adjustably joined to the stem and slide member for the transmission of endwise motion from said stem to said slide member of said release.

"36. There is no evidence that the defendants, or any of them, made, used or sold, during the period beginning June 9, 1924 and ending June 9, 1930, any cable release embodying the combination of two heads, a coiled spring

wire tube having spaced coils being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and [fol. 192] having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member.

"37. Claim 5 of plaintiff's patent is not infringed.

"38. There is no evidence that the defendants, or any of them, made, used, or sold, during the period beginning June 9, 1924 and ending June 9, 1930, any cable release having as an element of its structure a coiled wire tube intervening and threaded to the stem and slide member for the transmission of endwise motion from said stem to said slide member of said release.

"39. There is no evidence that the defendants, or any of them, made, used, or sold, during the period beginning June 9, 1924 and ending June 9, 1930, any cable release embodying the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion from said stem to said slide member.

"40. Claim 6 of plaintiff's patent is not infringed.

"41. Under all the evidence in this case your verdict must be for defendants."

[fol. 193] Defendants' Additional Points for Charge:

"1. The date of plaintiff's alleged invention is the filing date of his patent application, February 7, 1918.

"2. Any patent or publication issued or published earlier than February 7, 1918 in this country or abroad is to

be considered by you as knowledge prior to plaintiff's invention.

"3. Defendants' patent No. 1,297,327, application filed October 15, 1917, is earlier than plaintiff's invention. If you find in that patent 1,297,327 the same connection between the coiled wire tube and the trip or slide member that you find in defendants' accused structures, then you must find that claims 3, 5 and 6 of plaintiff's patent are not infringed.

"4. Plaintiff offered evidence to show that he disclosed a certain construction of release to Eastman Kodak Company on or about July 1st, 1918. Defendants have offered evidence to show that Kodak Company knew about and had drawings of this construction before that date. You are to consider that evidence only on the question, if there is any question in your minds, as to the identity or lack of identity between defendants' structures and plaintiff's patented structures. You are not to consider that evidence in connection with any question of damages. It is for the Court to say whether the actual damages, if any, suffered by plaintiff should or should not be considered.

"5. If you come to consider the amount of damages you must bear in mind that plaintiff in this case has not sued for and can not recover plaintiff's profits. You are to consider all the evidence as to the nature of the invention, its utility and advantages and extent of the use involved, and [fol. 194] you should endeavor to find what the parties would have agreed upon if both were reasonably trying to reach an agreement."

DEFENDANTS' MOTION FOR A DIRECTED VERDICT

"The defendants move the Court on the whole evidence in the case, to direct the jury to find a verdict for the defendants. The grounds of the motion are as follows:

"1. That the claims 1 and 2 of plaintiff's patent are void because of anticipation and total lack of novelty in view of the British Patent to Edwards & Watson No. 5,741 of 1906.

"2. That claims 3, 5 and 6 of plaintiff's patent are not infringed by defendants' accused structures because in

defendants' structures the stem and the slide member are connected to the coiled wire tube in the same way as in defendants' Patent No. 1,297,327 (application filed October 15, 1917), which is earlier than plaintiff's alleged invention (application filed February 7, 1918). What infringes if later is an anticipation if earlier.

"3. That the proceedings in the Patent Office leading up to the grant of plaintiff's patent preclude reading the words 'a coiled wire tube' into claims 1 and 2 as a limitation of the words 'means intervening' in those claims; and preclude the omission by construction of the words 'adjustably surrounding' in claim 3, 'adjustably joined' in claim 5, and or 'threaded' in claim 6.

"4. That claims 3, 5 and 6 of plaintiff's Patent are void for lack of novelty because the same connection of stem and slide member to a coiled wire tube thrust member surrounded by an open coiled spring with a fabric jacket is disclosed in British Patent to Edwards & Watson No. 15,645 of 1905."

[fol. 195] Monday, December 14, 1931, 10 A. M.

The Court: Members of the jury, you may retire to your room and deliberate upon your verdict.

VERDICT

Verdict: For plaintiff, $153,553.18.

IN UNITED STATES DISTRICT COURT

MOTION FOR NEW TRIAL AND TO SET ASIDE VERDICT—Filed December 18, 1931

And now comes the defendants in the above-entitled case and move the Court for a new trial and for an order setting aside the verdict in the above-entitled case for the following reasons:

1. The verdict was against the weight of the evidence.

With leave to file additional reasons in support thereof on or before January 2, 1932.

Boyd Lee Spahr, Attorney for Defendants.

December 18, 1931.

Approved:
By the Court.

Attest: Leo A. Lilly, Deputy Clerk.

[fol. 196] In United States District Court

Opinion—Rule for a New Trial—Filed December 20, 1932

Dickinson, J.:

This was the rarity of a Patent case tried to a jury. Doubtless from force of habit the charge of the Court was limited to a submission of the fact issues without discussion by the trial Judge. This is we think ordinarily the right course but a Patent case is an exception. Overlooking this the charge was wholly inadequate, and the jury lacked the instructions which should have been given. A new trial must in consequence be granted.

Rule absolute.

[fol. 197] In United States District Court

Stipulation Waiving Trial by Jury—Filed February 11, 1932

And, now, to wit, February 9, 1932, it is stipulated and agreed by and between counsel for plaintiff and defendant in the above-entitled cause, that trial by jury is hereby waived and that the case shall be submitted to the Court for decision upon the record already made, as if the testimony and exhibits offered in evidence at the trial before Judge Dickinson and a jury had been duly offered in evidence before the Judge who may be assigned to hear this case, subject to any objections which appear on the record, and that all motions made by either party at the said trial

shall be deemed to have been made before the Judge trying the case, both parties to have the right of appeal as in other cases.

Leon Edelson, T. R. White, Attorneys for Plaintiff.
Boyd Lee Spahr, Attorney for Defendants.

[fol. 198] In United States District Court

Opinion—Sur Pleadings and Proofs—Filed July 13, 1932

Kirkpatrick, J.:

This is an action at law for patent infringement. It was first tried to a jury and resulted in a verdict for the plaintiff in the amount of $153,553.18. Being of the opinion that his instructions to the jury were inadequate, the trial judge ordered a new trial. Thereafter the parties stipulated in writing that the case be tried to the court without a jury upon the testimony taken at the jury trial and upon that record the case is now before the court for findings and judgment.

The patent in suit is United States patent No. 1,314,867 (filing date, February 1, 1918) to the plaintiff for a flexible power-transmitting mechanism, particularly intended for use as a cable release, a well known device by which the shutter of a camera is actuated by pushing a plunger in the end of a cord or cable held in the operator's fingers. The reason for a flexible mechanism is that a thrust upon the shutter control either directly or through a rigid member is likely to jar the camera in the moment of exposure.

Formerly the desired result was accomplished by air compression by means of a bulb and a rubber tube. But it was found that rubber deteriorated rapidly, and the cable release, having a stem slid or pushed through an outer tubular member, was then evolved.

It was important, of course, that the device should be as nearly perfectly flexible as possible. A very slight degree of rigidity sometimes resulted in kinks or bends which prevented the free play of the inner sliding member and either disturbed the position of the camera or interfered with the perfect response of the shutter to the operator's control.

[fol. 199] Now a solid coiled wire tube is capable of transmitting power from a lengthwise thrust and at the same time is in the highest degree flexible, and the idea of making the members of the cable of coiled wire tubes is disclosed in the earliest patents for cable releases. In fact, the earliest of all the patents cited, the German patent to Wermann, of 1902, shows both the inner thrust member and the sheath constructed in this fashion.

It is the plaintiff's claim, however, that he first invented the combination of a closed coil for the thrust member with an open coil for the sheath. By a closed coil is meant one in which the spirals are in contact throughout so that the whole is incompressible lengthwise. In an open coil the adjacent spirals are spaced. Both in his testimony at the trial and through his counsel in argument the plaintiff urged that this combination of closed inner and open outer coils is the essence of his patent and his real contribution to the art.

With the exception of one minor feature, which appears in claims 5 and 6 and which will be discussed later, it is practically conceded that all the instrumentalities of the plaintiff's device were known and used in the prior art. Taking the question in its broadest aspect and assuming, as the plaintiff contends, that all the claims (including 1 and 2) can be so construed as to include the combination which he says constitutes his real invention, I am satisfied that it amounts to nothing more than an assembly of two selected elements, neither of them new, without any new joint function, and hence is unpatentable. Of course, they cooperate and whoever first combined a flexible inner thrust member with a flexible outer sheath in a cable release may have produced a real invention, but when that had been done, and especially after coiled wire tubes had been evolved for both members, the selection of superior forms [fol. 200] of coils from the prior art produced no new result as the product of the combination. Whatever advance there may have been was simply an aggregate of several results, each the complete result of one of the combined elements. The principle is too well established to require citation of authority.

No doubt a closed coil is the most satisfactory type of inner thrust member to be found in the prior art. An open coil would not do because of its compressibility and the only alternative was an ordinary wire or stranded wires.

But the closed coil being incompressible could transmit power just as well, while its superior flexibility greatly reduced the danger of kinking. The closed coil thrust member is a feature of the Wermann German patent of 1902, and also of the patent to Dakin and Underwood (filing date October 15, 1917) and was also manufactured by the defendant in this case prior to the date of the plaintiff's application.

For the sheath member an open coil is undoubtedly better than a closed coil. When the cable is bent the convolutions of the spirals on the inner side of the bend are drawn together without separating the spirals on the outside of the bend. This is desirable since the whole thing is enclosed in inextensible fabric and, otherwise inconvenient stresses and dislocations might be produced. But this mode of operation is a function of the outer spiral coil of itself and is performed entirely without regard to adjacent members of the combination. An open coil sheath member is shown in the Edwards British patent, No. 13,157, of 1905. The specification of that patent expressly recognizes that it was an old feature of such devices and had been used before in combination with an incompressible inner member.

It may be conceded that the plaintiff selected the best types of the elements to be found in the prior art and put [fol. 201] them together. However, his closed coil thrust member still transmitted power in exactly the same way in which it did in the Wermann German patent and the Dakin and Underwood patent, and the fact that it was enclosed in an open coil instead of a closed coil did not change its mode of operation. The open coil sheath member flexed in precisely the same manner as in the various British patents which disclose its use, and it would do so whether the thrust member were a coiled tube, a stranded wire, or a plain wire. I am unable to see how the advantages of the particular types selected by the plaintiff for each of these members are enhanced or in any way affected by the character of the other member, or to find anything new in the functional relationship between them.

I should say here, parenthetically, that I do not agree with the defendant that claims 1 and 2, if construed to call for a closed coil inner member, would be anticipated by the British patent to Edwards, No. 5,471 of 1906. I think that the disclosure of that patent as to the innermost mem-

ber means what the plaintiff says it does, namely that it may be formed of wires held together by a closely coiled spiral and that it does not call for a closely coiled spiral alone. This conclusion arises not only from the grammatical construction of the sentence, but from a consideration of the patent itself. The exemplifications shown in figures 5, 6 and 7 all provide for power transmission by a pull rather than a push. The cross-bar marked "j" in these figures is slideable on a barrel so that, with the operator's fingers about the cross-bar, the pressure of his thumb upon the button will pull the inner member outwardly instead of pushing it inwardly. A coiled spring could not possibly be used in this form of the device because it is extensible, but there is no suggestion in the specification that these forms require any different kind of inner mem- [fol. 202] ber from the other forms in which the power is transmitted by a push.

The conclusion that the combination of closed coil inner member and open coil outer member is not patentable in view of the prior art renders claims 1 and 2 invalid even if they be interpreted as claiming that particular combination, as the plaintiff contends. It may be well, however, to say that in my opinion they may not be so interpreted. These claims do not call for a coiled tube as an inner member but merely for "means intervening * * * for the transmission of endwise motion," and, if read as stated, made a combination which was clearly anticipated by the British patents. Only by reference to the specification can the claim be narrowed to a claim for a coiled tube inner member. The file wrapper history, however, shows that another claim (original claim 17) identical in all respects with claim 1 (and substantially identical with claim 2) except for the fact that it called for a "coiled wire tube" instead of "means intervening" was disallowed by the examiner, as so anticipated. The plaintiff then amended by including a "barrel" feature in both claims and claim 1 was allowed. Claim 17 was again rejected "as not patentably distinct from claims 1 and 4 allowed." In this action the plaintiff acquiesced.

The case is so nearly on all fours with U. S. Repair etc., Company v. Assyrian Asphalt, 183 U. S. 591, that the opinion in that case may be applied to this with a very little paraphrasing, thus: "Another objection to the proposed

limitation of the claim by making it read * * * ('a coiled wire tube') * * * in lieu of the unqualified word * * * ('means') * * * is the fact that the * * * ('17th') * * * claim, which contained the additional words, was withdrawn by the patentee upon a ruling or declaration of the Patent Office that the 1st and * * * [fol. 203] ('17th') * * * claims were the same in substance and could not both be permitted to remain in the case. * * * Having voluntarily abandoned the claim for * * * ('a coiled wire tube') * * * the patentee * * * may not now insist that a broad claim containing no suggestion of such invention shall nevertheless be subjected by construction to the same restriction."

The examiners' additional statement in rejecting claim 17, "the use of the 'coiled wire tube' for the 'intervening means' defined in claim 1 is not patentable in view of the German patent of record," is not so hard to understand as the plaintiff appears to think. In allowing claim 1 the examiner obviously felt that a barrel feature was the only thing which saved it. He had already said that "means intervening" was not patentable and then he went on to say that further defining "means" as a "coiled wire tube" did not help the situation because the coiled wire tube was no advance over the German patent. Therefore, he said, the combination as patentable, which meant including the barrel, was identical in the two claims. Of course, he was in error in thinking that the barrel was a new feature, because it is clearly disclosed in British No. 5,741 of 1906 to Edwards and Watson, but that patent probably had not been called to his attention.

Claim 3 is clearly not infringed and the plaintiff does not seriously contend that it is. In the defendant's device the inner thrust member does not surround either the stem or the slide member.

Claims 5 and 6 call for a closely coiled inner tube and could be dismissed as invalid for want of patentable novelty for the same reasons which apply to claims 1 and 2, except for the fact that they contain the additional requirement that one of the features of the combination—a small rigid stem which takes power from the thrust member and actually pushes the shutter—be "adjustably joined" to the [fol. 204] thrust member (claim 5) or "threaded to" it (claim 6). This form of connection was described by the plaintiff himself as "a minor feature of the machine * * *

only a side issue" and, though claims 5 and 6 are expressed as combination claims they are obviously in reality nothing more than claims for this particular form of connection. The patent to Dakin and Underwood shows a method of joining the thrust member to the stem which is substantially the same as that of the alleged infringing device. The argument made by the plaintiff that the two prick points disclosed in the Dakin drawing deform the coils of the thrust member and prevent it from being screwed out is without support in the record, and the fact that Dakin uses the word "fixed" in describing his method of attachment does not necessarily mean that the stem is so fixed that it cannot be unscrewed. The connection of the infringing device is a single prick point and it is rather hard to see from an X-ray photograph to what extent it deforms the coils of the thrust member if at all, but, taking the substance of the matter, that type of connection is clearly disclosed by Dakin. If the claims are to be construed as covering it they would be invalid as anticipated and as a matter of fact I think they are.

I have not dealt with the question of the anticipation of the plaintiff's device by the defendants themselves because, in view of the conclusions reached in this opinion, it is unnecessary for me to make any definite findings upon this point and I refrain from so doing.

The statements of fact contained in this opinion may be taken as findings of fact. If separate findings of fact are desired the parties may submit requests in accordance herewith.

[fol. 205] The conclusions are:

1. The combination of closed coil inner thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together.

2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of this patent.

3. Claims 1 and 2 are anticipated.

4. Claim 3 is not infringed.

5. Claims 5 and 6 are invalid because United States patent No. 1,297,327 to Dakin and Underwood antedating the

plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion, "1" applies to these claims.

Judgment may be entered for the defendant.

By the Court.

W. H. Kirkpatrick, J.

IN UNITED STATES DISTRICT COURT

ORDER SEALING BILL OF EXCEPTIONS

The said counsel for the said plaintiff did then and there tender this bill of exceptions to the rulings, opinion and action of the said Court, and requested the seal of the Judge aforesaid should be put to the same, according to the form of the statute in such case made and provided.

And, thereupon, the aforesaid Judge at the request of said counsel for the plaintiff, did put his seal to this bill [fol. 206] of exceptions, pursuant to the aforesaid statute in such case made and provided this twenty-eighth day of July, 1932.

W. H. Kirpatrick, Judge. (Seal)

Pennie, Davis, Marvin & Edmonds, Ballard, Spahr, Andrews & Ingersoll.

Approved as to form.

Boyd Lee Spahr, Attorney for Defendants.

IN UNITED STATES DISTRICT COURT

PRÆCIPE FOR JUDGMENT—Filed July 16, 1932

To the Clerk of the said Court:

Enter judgment in the above-entitled case, in accordance with the opinion of Kirkpatrick, J., filed therein, in favor of the defendants and against the plaintiff.

(Sgd.) Ballard, Spahr, Andrews & Ingersoll, Attorneys for Defendants.

[fol. 207] IN UNITED STATES DISTRICT COURT

JUDGMENT—Filed July 16, 1932.

Before Kirkpatrick, J.

And now, July 16, 1932, in accordance with the opinion of the Court and by præcipe filed, judgment is hereby entered in favor of defendants and against the plaintiff, Charles B. Gray.

By the Court.

Attest (Sgd.) E. G. Johnson, Deputy Clerk.

IN UNITED STATES DISTRICT COURT

PETITION FOR APPEAL—Filed August 15, 1932

To the Honorable William H. Kirkpatrick, Judge of the District Court of the United States for the Eastern District of Pennsylvania:

Charles B. Gray, your petitioner, is the plaintiff in the above-entitled case, and prays that he may be permitted to take an appeal from the judgment entered in the above case on the thirteenth day of July, 1932, to the United States Circuit Court of Appeals for the Third Circuit, for the reasons specified in the assignments of error which are filed herewith.

And your petitioner desires that said appeal shall operate as a supersedeas, and therefore prays that an order be made fixing the amount of security which the plaintiff shall give and furnish upon such appeal, and that upon [fol. 208] giving such security all further proceedings in this court be suspended and stayed until the termination of said appeal by the said Circuit Court of Appeals.

Leon Edelson, T. R. White, Attorneys for Charles B. Gray.

August 13, 1932.

IN UNITED STATES DISTRICT COURT

ORDER ALLOWING APPEAL—Filed August 15, 1932

The petition of Charles B. Gray, plaintiff in the above-entitled case, for an appeal from the final judgment is hereby granted and the appeal is allowed, and upon the petitioner filing a bond in the sum of $250 with sufficient sureties and conditioned as required by law, the same shall operate to suspend and stay all further proceedings in this court until the termination of said appeal by the Circuit Court of Appeals.

(Sgd.) W. H. Kirkpatrick, District Judge.

August 13, 1932.

[fol. 209] IN UNITED STATES DISTRICT COURT

PLAINTIFF'S ASSIGNMENTS OF ERROR—Filed August 15, 1932

And now comes the plaintiff in the above-entitled action and files the following assignments of error on which he relies upon the prosecution of his appeal in the above-entitled action from the judgment made by this Honorable Court on the thirteenth day of July, 1932, and assigns error in the following matters, to wit:

First: The learned Trial Judge erred in finding as follows:

"1. The combination of closed coil under thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together."

Second: The learned Trial Judge erred in finding as follows:

"2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of this patent."

Third: The learned Trial Judge erred in finding as follows:

"3. Claims 1 and 2 are anticipated."

Fourth: The learned Trial Judge erred in finding as follows:

"5. Claims 5 and 6 are invalid because United States patent No. 1,297,327, to Dakin and Underwood antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion "1" applies to these claims."

[fol. 210] Fifth: The learned Trial Judge erred in his final order as follows:

"Judgment may be entered for the defendant."

Wherefore, plaintiff prays that the said judgment and order may be reversed, and for such other and proper relief as to the Court may seem just and proper.

Leon Edelson, T. R. White, Attorneys for Charles B. Gray.

[fol. 211] In United States District Court

Præcipe for Transcript of Record—Filed August 17, 1932

To the Clerk of said Court:

You are hereby requested to make a transcript of the record to be filed in the United States Circuit Court of Appeals for the Third Circuit, pursuant to an appeal allowed in the above-entitled case, and to include in such transcript of record the following papers and exhibits, to wit:

1. Docket entries.
2. Statement of claim, both original and as amended.
3. Pleas of respective defendants.
4. Bill of exceptions and order of Court sealing the same (including testimony, exhibits, charge of Court to jury at the first trial, verdict at the first trial, defendants' motion and reasons for a new trial, defendants' additional reasons for a new trial, opinion of Court granting defendants' motion for a new trial, stipulation between counsel for plaintiff and defendants respecting the new trial, and opinion of Court at conclusion of second trial).
5. Præcipe for and entry of judgment.

6. Judgment.
7. Assignments of error.
8. Petition for appeal and allowance thereof.
[fol. 212] 9. Clerk's certificate.
10. This præcipe and service thereon.

Said transcript to be prepared as required by law and the rules of this Court and the rules of the United States Circuit Court of Appeals for the Third Circuit, and to be filed in the office of the clerk of the said Court on or before the twelfth day of September, 1932.

Leon Edelson, T. R. White, Attorneys for Appellant, Charles B. Gray.

Service of the above præcipe is accepted and acknowledged this sixteenth day of August, 1932.

(Sgd.) Ballard, Spahr, Andrews & Ingersoll, by Allen Hunter White, Attorneys for Appellees.

[fol. 213] Clerk's Certificate to foregoing transcript omitted in printing.

[fol. 214] In United States District Court for the Eastern District of Pennsylvania

[Title omitted]

Order Extending Time

And now, to wit, this tenth day of September, 1932, Leon Edelson, of counsel for plaintiff, and Boyd Lee Spahr, of counsel for defendants, having appeared before the Court and consented thereto, it is hereby ordered and decreed that the return day of the citation on appeal in the above-entitled case be and the same is hereby extended up to and including October 15, 1932.

By the Court.

(Sgd.) W. H. Kirkpatrick, J.

Agreed to.

Leon Edelson, of Counsel for Plaintiff. Boyd Lee Spahr, Ballard, Spahr, Andrews & Ingersoll, of Counsel for Defendants.

IN THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT, OCTOBER TERM, 1932

No. 4986

CHARLES B. GRAY, Appellant,

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC., Appellees

Appeal from the District Court of the United States for the Eastern District of Pennsylvania

MOTION TO DISMISS APPEAL AND/OR AFFIRM JUDGMENT

Now come Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., appellees in the above entitled cause, by their attorneys and counsel, and move the Court to dismiss the appeal herein and/or affirm the judgment from which said appeal is taken upon the ground that the record presents no question properly reviewable by this Court.

The facts upon which the above motion is based, briefly stated, are as follows:

The appeal is from a judgment entered in favor of the appellees in an action at law brought by the appellant to recover damages for patent infringement (Tr. p. 207).

The case was first tried before Judge Dickinson and a jury and resulted in a verdict for plaintiff. This verdict was set aside by the trial judge and a new trial ordered.

Thereafter, the parties, by their attorneys, entered into and filed with the Clerk of the District Court, in accord with 28 U. S. Code Sec. 773, the following stipulation (Tr. p. 197):

"And now, to wit: February 9, 1932, it is stipulated and agreed by and between counsel for plaintiff and defendant in the above entitled cause, that trial by jury is hereby waived and that the case shall be submitted to the Court for decision upon the record already made, as if the testimony and exhibits offered in evidence at the trial before

Judge Dickinson and a jury had been duly offered in evidence before the Judge who may be assigned to hear this case, subject to any objections which appear on the record, and that all motions made by either party at the said trial shall be deemed to have been made before the Judge trying the case, both parties to have the right of appeal as in other cases."

Pursuant to the above stipulation the cause came on to be heard before Judge Kirkpatrick without a jury upon the record therein referred to, the pleadings, and the arguments and briefs of counsel.

Subsequently Judge Kirkpatrick filed an extensive opinion (Tr. p. 198) discussing the various issues of fact and law involved in the case. Near the end of the opinion he wrote:

"The statements of fact contained in this opinion may be taken as findings of fact. If separate findings of fact are desired the parties may submit requests in accordance herewith" (Tr. p. 204).

Following this Judge Kirkpatrick set forth his conclusions from the facts found with respect to each of the claims relied upon by plaintiff as follows (Tr. p. 205):

"1. The combination of closed coil inner thrust member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together.

2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of this patent.

3. Claims 1 and 2 are anticipated.

4. Claim 3 is not infringed.

5. Claims 5 and 6 are invalid because United States patent No. 1,297,327 to Dakin and Underwood antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion '1' applies to these claims."

He then concluded the opinion with the following direction: "Judgment may be entered for the defendant."

No special findings of law or fact were requested by the appellant either before or after the filing of the opinion and none were made. No motion for judgment was made on appellant's behalf either at the first or second trial. The appellant reserved no exceptions of any kind during either trial of the case. No exceptions were reserved by the appellant at any time unless it can be said that the recital in the order sealing the bill of exceptions (Tr. p. 205) that

"Counsel for the said plaintiff did then and there tender this bill of exceptions to the rulings, opinion and action of the said Court, and requested the seal of the Judge aforesaid should be put to the same"

shows a general exception taken after the trial of the case to the findings and conclusions set forth in the opinion of the Court.

The assignment of errors filed herein (Tr. p. 209) contain six specifications. Each specification is general, in contravention of Rule 11 of the Rules of this Court requiring each error to be set out particularly, the style of specification being the assertion that "The learned Trial Judge erred in finding as follows:" followed by quotation of the conclusion or order attacked. The first five specifications are addressed to the conclusions which the trial judge drew from the facts found. (These conclusions are quoted above.) The sixth specification is addressed to the order that judgment be entered for the defendants. The general findings of fact made by the trial judge are not challenged as being without support in the evidence or for any other reason by any specification of error.

In view of the foregoing facts counsel for the appellee are of the opinion that the appeal should be dismissed without further consideration upon the authority of Fleischmann Co. v. United States, 270 U. S. 349; Wilmington Steamboat Co. v. Sturgess, 55 F. (2d) 831, C. C. A. 3, and Arthur C. Harvey Co. v. Malley, 60 F. (2d) 97.

Notice of this motion has been given counsel for appellant.

Pennie, Davis, Marvin & Edmonds, Ballard, Spahr, Andrews & Ingersoll, Attorneys for Appellees.
William H. Davis, George E. Middleton, Chas. W. Riley, Boyd Lee Spahr, of Counsel.

IN THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT, OCTOBER TERM, 1932

No. 4986

CHARLES B. GRAY, Appellant,

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC., Appellees

Appeal from the District Court of the United States for the Eastern District of Pennsylvania

NOTICE OF MOTION TO DISMISS APPEAL AND/OR AFFIRM JUDGMENT

Please take notice that on Friday, the 9th day of December, 1932, at the opening of the court, or as soon thereafter as counsel can be heard, the motion of which the foregoing is a copy will be submitted to the Court of Appeals for the Third Circuit for the decision of the said court thereon.

Pennie, Davis, Marvin & Edmonds, Ballard, Spahr, Andrews & Ingersoll, Attorneys for Appellees.

To Thos. Raeburn White, Esq., Leon Edelson, Esq., 1505 Land Title Bldg., Philadelphia, Pa., Attorney for Charles B. Gray:

Service of the above notice and receipt of a copy of the motion therein referred to is hereby acknowledged this 29th day of November, 1932.

(Sgd.) Thomas Raeburn White.

Endorsements: Motion to Dismiss Appeal, etc. Rec'd & Filed Dec. 2, 1932. Wm. P. Rowland, Clerk.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT, OCTOBER TERM, 1932

No. 4986

CHARLES B. GRAY, Appellant,

vs.

EASTMAN KODAK CO., et al., Appellees

And afterwards, to wit, the 9th day of December, 1932 come the parties aforesaid by their counsel aforesaid, and

this case being called for argument sur pleadings and briefs, before the Honorable Joseph Buffington, Honorable J. Warren Davis and Honorable J. Whitaker Thompson, Circuit Judges, and the Court not being fully advised in the premises, takes further time for the consideration thereof.

And afterwards, to wit, on the 22d day of August, 1933 come the parties aforesaid by their counsel aforesaid, and the Court, now being fully advised in the premises, renders the following decision:

IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT, OCTOBER TERM, 1932

No. 4986

CHARLES B. GRAY, Plaintiff-Appellant,

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY (OF NEW YORK), and EASTMAN KODAK STORES, INC., Defendants-Appellees

Appeal from the District Court of the United States for the Eastern District of Pennsylvania

Before Buffington, Davis, and Thompson, Circuit Judges

OPINION—Filed August 22, 1933

BUFFINGTON, J.:

In the Court below Charles B. Gray brought an action at law against The Eastman Kodak Company, charging infringement of patent No. 1,314,867 granted to him September 2, 1919, for a power transmitting mechanism. On trial the jury found a verdict for the plaintiff of $153,553.18. Thereafter the trial Judge, feeling there was error in the trial, set the verdict aside. Thereupon the parties, by stipulation filed in court, waived a trial by jury and agreed "that the case shall be submitted to the Court for decision upon the record already made * * * both parties to have the right of appeal as in other cases." In substance, the trial was a quasi demurrer. No witnesses were examined. On final hearing neither party asked for any special findings of fact, for there were no disputed facts. The trial Judge, holding the patent did not involve invention,

directed "judgment may be entered for the defendant." Thereupon the plaintiff took, and the Court sealed, "this bill of exceptions to the ruling, opinions and action of said Court," and thereafter granted the appeal the parties had stipulated.

The case concerns kodaks, or small hand carried photographic outfits, which, by rapid shutter action, turn off or on light from its chamber (for the Latin word for a chamber is "camera") and makes possible the instantaneous taking of what are fittingly termed "snap shots". It will thus be seen that the non-moving or non-jarring of the camera and the dependable action of its shutter are vital elements in the kodak art. The shutter actuating mechanism of such art, prior to Grays patent, consisted of a hollow rubber bulb, held by the operator in the hand and connected by a small tube with the shutter-controlling mechanism. Pressure of the bulb or release of pressure moved the shutter. In the large cameras of photographic studios the rubber bulb is still in use. In the kodak art, where it was once universally used, it is now seldom seen, and not at all on new cameras.

Now while the rubber bulb on the shutter mechanism was flexible, non-kinking, and sprang back to place when bulb pressure was releaesed, it nevertheless was subject to deterioration, the rubber lost its spring, and replacement was required. The proofs show a consequent effort by the art, both here and abroad, to get away from pneumatic pressure, or an air pressure column, and substitute therefor a metallic or what is termed a "cable release" plunger pressure. This cable release or plunger consisted in the first effort—to get away from the rubber tube—of a small wire cable, and later of a non-compressible or close-wound spring. As this transition from a pneumatic to a metallic thrust has been eventually perfected, we now see that the goal to be reached, in order to make a satisfactory mechanism, was a unitary structure which coupled together the different elements of rigidity of the plunger, the flexibility of such plunger, and positive resiliency of the plunger, for plunger rigidity was necessary to effect the thrust. So also flexibility was necessary to obviate kinking; and active resiliency was required to spring the plunger back to normal shape and position. In other words, it was necessary to obtain the positive thrust and at the same time avoid

kinking of the structure as a whole. This was eventually effected in the simple mechanism of Gray, who was an experimental engineer for twenty years. The steps that were taken by him to reach this result we now consider. His device is now in universal use. But in order to appreciate what Gray actually did to solve the problem we must recognize the essential difference between a spaced, open-wound, spiral spring which is compressible, and a close-wound, spiral spring which is non-compressible. We must also recognize how objectionable was kinking; how desirable is a rubber-like flexibility; how the apparatus must be bent to the small space of a Kodak every time pictures are taken.

From the record it appeared the first step in the attempt to get away from the rubber bulb and tube of the art was the use, as a plunger, of a strand or a number of fine wires braided together. But while such wire could, under lengthwise pressure, bend and was in that sense flexible, yet it was likely to form an angle at the bending point and did not spring back to place or to normal shape. The result of this was that the wire plunger, when bent, was liable to stay "put", with the effect that when one tried to take another picture, the kinked wire plunger stayed "put" and one got no exposure and no picture because the shutter did not work. In the patent history of the development of the art the first attempt to do away with the objectionable wire plunger was made abroad in the German patent of 1902 to Wermann. He substituted for the wire plunger a spiral spring inside another coiled spring. At this point we note that both Wermann's spiral springs were close-wound and therefore non-compressible, because their close-wound coils had no open space between the leaves of the spring and, while these close-wound springs were bendable and therefore, to a degree, flexible, yet they were wholly different in operation from an open-wound spiral spring. This difference will be seen when the action of the open-wound, as contrasted with a close-wound, spring is closely observed. When such an open-wound spring is bent, the leaves freely separate to spring apart at the outer circumference and at the same time freely approach each other or compress at their inner circumference. In other words, bending of such open-wound spring makes it expand at its outer side and compress at its inner. The result is that

there is in the case of the open-wound spring, a free play in expansion and an active resiliency which, on release of pressure, brings the open-wound spring back to normal. Now it is quite evident, as the subsequent development of the art proved, that no successful plunger can be made unless an outer open-wound spring is used for enveloping. Wermann, it is true, made a step forward in substituting a spiral, close-wound spring plunger for a rigid wire. He got a plunger which was rigid yet measurably flexible, but around such close-wound plunger spring he took the fatal step of placing another close-wound spiral spring. So near the solution of the problem was he that had he used an open-wound spiral spring to envelop his close-wound spring plunger, he would then have solved the problem which Gray solved many years later. But Wermann failed to take this vital step, precisely as the great Eastman Company, with all its experience and expert skill, failed to take it years later. As a result, Wermann's device failed, and made no impress on the camera art, which continued to use the pneumatic or rubber tube. No one today would think of using Wermann's combination of a close-wound, non-compressible, spiral plunger and a close-wound, non-compressible, spiral sleeve as an envelope. While Wermann suggested the use of a non-compressible, spiral spring plunger (which is used in the present art) his contribution to the art was to teach it how to make it not work because of the close-wound spiral spring he used as an envelope.

The next attempt was also made abroad in the British patent of Edwards in 1905. As we understand, Edwards differed, inter alia, from Wermann in one vital particular—he discarded the close-wound, spiral plunger of Wermann and went back to the objectionable wire or wire plaited rigid plunger of the old art. In that regard the Court below held, and rightly so, that the disclosure of Edwards' patent of 1906 "as to the innermost member means what the plaintiff says it does, namely, that it may be formed of wires held together by a closely coiled spiral and that it does not call for a closely coiled spiral alone." This conclusion is strengthened by the fact that the same Edwards in his American patent of 1906 shows the innermost metallic pusher as being wire, saying, "b is the flexible innermost member and is advantageously composed of a strand of thin flexible wires in such wise as to be incompressible,

...ing the strain (pressure) to which same is normally ... Subsequent development shows conclusively that ... of a wire plunger was fatal to the utility of Ed... device. Instead of advance in the art, Edwards ... backward step in his use of kinking wires which ... fatal. Edwards taught the art nothing except ... by his precept and example. Like Wermann, Ed... was not an enlightening and helpful white light, ... light showing what the art should avoid.

... attention is also called to the patent to Duryea, No. ... of 1911. But this shows an even more radical ... from the mechanism by which the plunger prob... was finally solved. Duryea went back to an incom... outer spiral. "I overcome", he says, "these ... by rendering the flexible outer member inexten... as well as incompressible." He used wire for his ... instead of a spiral, as his patent says, "and by ... for the inner member a wire of high elasticity."

... will thus be seen that up to 1917 the problem of a suc... metallic plunger had not been solved and a great ... like the Eastman, with its skilled engineers, con... to use the rubber bulb with the pneumatic push. ... its assigned patent No. 1,297,327, through ... employees, recognition is made by the Eastman ... of existing difficulties in cable or plunger devices. ... "The present invention relates to photography ... more particularly to shutter actuating devices of the ... known as cable release, in which two laterally flexible ... one working within the other and terminating ... movable finger pieces, are connected, respec... shutter casing and an operating part thereof ... a means for actuating the shutter without jarring ... camera and in a convenient and comfortable manner. ... the invention has for its object to increase the flexibil... of the members so that extreme distortions thereof will ... result in permanent kinks or bends that would inter... with the relative sliding movement of the members." ... objects of plunger non-kinking and camera non... Eastman's patentee sought to obviate by sleeving ... wire spiral within another, but Eastman's fatal mis... was that both spirals were close-wound. The specifi... describes the inner spiral as "closely wound incom... wire helix". It is further described as being

"as flexible as the outer helix 5 and more so." We therefore have in this Eastman employee's patent a close-wound, incompressible wire plunger and an enveloping close-wound non-compressible spiral spring even less flexible than the inner one. From this it will be seen that no one in the art up to 1917 had placed a close-wound, spiral plunger inside an open-wound spiral.

In 1918, sixteen years after the German patentee, and thirteen years after the British patentee, failed to solve the problem, the plaintiff applied for the patent in suit. Without at present entering into details, it suffices to say that he therein disclosed for the first time in the kodak art a close-wound, spiral wire spring as a plunger and an open-wound spiral tube surrounding it. This is aptly stated in the opinion of the trial Judge, who says:

"It is the plaintiff's claim, however, that he first invented the combination of a *closed* coil for the thrust member with an *open* coil for the sheath. By a closed coil is meant one in which the spirals are in contact throughout so that the whole is incompressible lengthwise. In an open coil the adjacent spirals are spaced. Both in his testimony at the trial and through his counsel in argument the plaintiff urged that this combination of closed inner and open outer coils is the essence of his patent and his real contribution to the art."

It is also shown by Gray's drawings and specification, which latter reads as follows: "This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, G, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely-wound, adapts itself to the bending without kinking. Practice has shown that a mechanism of this construction may be bent an indefinite number of

times without kinking or otherwise disabling the coiled wire tubes." The résumé of the prior art shows Gray's patent first disclosed this combination. Assuming such was the case, the Court below held this novel combination was a mere aggregation or selection of previously known objects and the combination did not involve invention. In other words, the patent of the man who solved the problem and made the metallic plunger work is declared void by reason of patents of men which did not work and disclosed no such combination as did Gray, of a close-wound inner coil and an open wound, enveloping outer coil.

Turning to that question, we note the three requirements of a valid patent—novelty, usefulness, invention. As to the first requirement, there is no question. The proofs simply show, and there is no proof to the contrary, that prior to Gray, no one had disclosed that combination. It was, therefore, novel. As to its usefulness, it is shown that after the defendants saw Gray's combination, they ceased making other types, and concede that since then they have made and marketed one million of Gray's device. The defendants' adoption and use prove its usefulness. In that regard this Court, in 261 Fed. 362, said:

"The imitation of a thing patented by a defendant who denies invention, has often been regarded, perhaps especially in this circuit, as conclusive evidence of what the defendant thinks of the patent and persuasive of what the rest of the world ought to think."

Was it inventive? The testimony of defendants' witness, Christie, who was the general foreman in charge of Eastman's experimental work, is conclusive and uncontradicted. Christie testified:

"Q. Did you remain with the Eastman Company continuously from 1913 to date?

A. The latter part of December, 1917, I enlisted in the army, and was discharged and returned to work at Eastman Kodak in May of 1919.

Q. When you went to the war, what type of cable release was the company manufacturing?

A. They were manufacturing the close-wound outer casing and close-wound coil cable.

Q. Before you went to the war they had substituted the close coil inner cable for *straight wire* cable?

A. That is right.

Q. And when you came back from the war what were they manufacturing?

A. They were manufacturing the *spaced open wound* outer casing and the close coil cable.

Q. That is the present construction?

A. Correct.

Q. Can you tell us the purpose and effect of these changes in the construction of the release?

A. *Each change was an attempt to obtain a more flexible cable release.*

Q. That is the *coiled push member* or cable was more flexible than a *straight wire* cable is that right?

A. It was.

Q. *And the open coil casing was more flexible than the closed coil casing?*

A. It was."

But not only was there no contradiction of this affirmative proof of this witness in charge of the Eastman's experimental work, but the contention of lack of invention was evidently an afterthought, for at the first trial no such contention was made. In that regard, at the jury trial, the Judge stated to the jury: "I have called your attention to these three elements—invention, utility, novelty. Invention, as I understand it, is not in real controversy here. So, you need not trouble yourselves about it."

We here again note—for it cannot be too strongly stated—that in this case there are no disputed facts. The significant, undisputed facts are that both close-wound and open-wound coil springs were well known mechanisms in use in the Kodak art. The further undisputed fact is that Gray was the first to use in combination a close-wound interior coil and open-wound exterior coil, and the consequent crucial question is did such conjoint use involve invention? On that question the trial Judge made no finding of fact, but confined himself to an expression of opinion, saying: "I am unable to see how the advantages of the particular types selected by the plaintiff for each of these members are enhanced or in any way affected by the character of the other member, or to find anything new in the functional relationship between them." Not only has this expression of opinion no testimony in the record to support it, but, as we have noted in the evidence produced

by the defendant itself in the testimony of its witness Christie, quoted above, the proof by this experimental man, the foreman of Eastman's experimental work, is that by the combination of Gray's close-wound inner and open-wound outer coils a new and increased flexibility was obtained, and that to such a degree that this great company, as soon as Gray showed them his device and they cut open the exterior textile jacket to see *how* this flexibility was effected, at once abandoned their rubber device, ignored and abandoned the attempt of their employee to supplant the rubber tube practice, and immediately began to make Gray's device by the hundreds of thousands, and wherever the Kodak goes, Gray's tube goes with it to make it dependable. Christie's proof of the combination's increased flexibility is undenied and undeniable. Here stands the defendants' undenied proof:

"Q. When you went to the war, what type of cable release was the company manufacturing?

A. They were manufacturing the *close-wound outer* casing and *close-wound coil* cable.

Q. Before you went to the war they had substituted the close-coil inner cable for straight wire cable?

A. That is right.

Q. And when you came back from the war what were they manufacturing?

A. They were manufacturing the spaced *open-wound* outer casing and the *close-coil* cable.

Q. That is the present construction.

A. Correct.

Q. Can you tell us the *purpose* and *effect* of these changes in the construction of the release?

A. *Each change* was an attempt to obtain a more flexible cable release.

Q. That is the coiled push member or cable was more flexible than a straight wire cable, is that right?

A. It was.

Q. And the open coil casing was *more flexible* than the closed coil casing?

A. It was."

In the face of such testimony, produced by the defendant itself, in the absence of any proof to the contrary, and in view of the *sale* of a million of the Gray combination, it will be seen that, with all due respect to the statement of

the trial Judge that he was "unable to see how the advantages of the particular types" were "enhanced or in any way affected by the character of the other member", his opinion must, and should, give way to the proofs in the case furnished by defendant's witness and by the action of his company in abandoning the old practice and taking up Gray's device.

To the contention of the defendant that Gray's new combination of old elements had no patentable merit, the sufficient answer is Christie's testimony—as of old, "out of thine own mouth do I convict thee." Moreover, in addition to this proof of the new function of increased flexibility, we think the trial Judge failed to give due weight to the presumption of invention arising from the grant of the patent. In the proceedings in the patent office, there were, as is here the case, no disputed facts. Open-wound coils and close-wound coils were known agencies. Gray's combination of an open-wound coil enveloping a close-wound coil was new, and the sole question before the patent office, as here, was whether such combination of the two warranted, under the law, the grant of a patent. This question of law was decided in favor of the patentee, for as we have said there was no conflict of fact before the patent office, and under the authorities raised a presumption of law that the device involved invention. In that regard the Supreme Court, in 220 U. S. 428, said:

"It (the invention) possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent."

And where, as here, all the alleged anticipatory patents now cited were considered by the patent office, the presumption is materially increased and the grounds for invalidating the patent must be correspondingly greater. See cases cited in Walker on Patents (6th Edition) § 535.

Moreover, apart from the undisputed facts and from there being the proof of the increased flexibility of the Gray combination, we think the patent should not have been held invalid. There being no question as to the facts, the Court below was confronted with the legal question of whether the making of the combination, which was novel and useful also, involved invention. In that regard the Court held:

"Taking the question in its broadest aspect and assuming, as the plaintiff contends, that all the claims (including 1 and 2) can be so construed as to include the combination which he says constitutes his real invention, *I am satisfied that it amounts to nothing more than an assembly of two selected elements, neither of them new, without any new joint function, and hence is unpatentable.* Of course, they cooperate and whoever first combined a flexible inner thrust member with a flexible outer sheath in a cable release may have produced a real invention, but when that had been done, and especially after coiled wire tubes had been evolved for both members, the selection of superior forms of coils from the prior art produced no new result as the product of the combination. Whatever advance there may have been was simply an aggregate of several results, each the complete result of one of the combined elements. The principle is too well established to require citation of authority."

Was the Court right in so holding? In taking up that question, we have this situation. The use of a plunger or inner member of a close-wound, non-compressible spiral spring was old. Wermann used it in Germany and the defendant had used it in America, but neither of them had sleeved it in an open-wound coil. So also the use on an outer or envelope member of close-wound coil was old. It had been so used in Britain by Edwards, but he used it as an envelope around a wire plaited plunger. Now the concept of Gray was to take the two well known devices of the prior art and for the first time use them conjointly; the close-wound coil as a pusher or plunger and the open-wound coil as an envelope. What was the effect of this novel combination? Christie answers that question. By this novel union Gray got a photographic mechanism which was so superior to prior devices that it superseded and displaced all other and has been used by over a million users who bought from the defendant. Why this almost unprecedented result? A study of the prior structures and the exhibits in the record shows that Gray has produced a device which, while it retains the pusher rigidity of a wire, has done away with kinking and has furnished a mechanism which is as soft to the touch and as flexible as the rubber device of the old one which was abandoned, and at the same time has given a non-kinking plunger that is as rigid as a stiff wire.

In other words, Gray gave to the Kodak the pliable, non-kinking features of the rubber tube, while at the same time he has retained the rigidity of a metal pusher without destructive kinking. This has been done not by merely using the two different kinds of coils, but by using them in a new relation, namely, by using the close-wound coil in the only place where it can be functionally modified by the outer open-wound coil and by using the open-wound coil in the only place where it can be modified by the inner placed close-wound coil. If Gray's relative positions were changed, if his open-wound coil was placed on the inside, and his close-wound one on the outside, if both coils were close-wound, or both were open-wound coils, such changes would be fatal. It is the new, inner and outer positions and relations in which these two different kinds of coils are placed that enables the outer coil to affect the inner and the inner to affect the outer as they never had before. This fact—for such it is—of the two coils, due to their relative position, affecting each other, is so original and seemingly so non-apparant as to lead to the belief that there is a mere aggregation of non-interlocking parts. But treating it as an aggregation with no new resultant function shows how really inventive, when duly appreciated, the new combination was. It took original thought to conceive and effort to embody the conception in practice. The effect of the novel combination of the two well known types of coils would occur only to the inventive mind, for other types of mind would naturally suppose that, used conjointly, they would operate in the old way. But the outcome proved otherwise. Moreover, the union of the two—one enveloping the other—only came after attempts for years to improve cable release. Enveloping the pusher member with a spring was known. The rigidity of a close-wound coil was known. So also was the expansibility of a loose-wound coil. Yet, strange as it seems, no one, prior to Gray, thought of nesting the former inside the latter. And when Gray disclosed it, as he did when he sent one of his devices to the defendant, it was jacketed by a textile cover. The defendant evidently could not understand how the rubber-like flexibility was effected and Gray's testimony, while not of facts, has the impress of certainty when he testified: "The cover was evidently slitted to see what was in the inside, to see the construction." They cut it open to see by what means he did it, at once recognized its worth, dis-

carded their then type and adopted his. Now that it has proved its worth, his device deserves judicial recognition and its infringement due money reparation. The proofs show defendants have profited largely from it.

Why should they not now share that profit with the one who devised it? In answer to this question it is contended that under the pleadings and procedure in this case the decision of the trial Judge is final and conclusive on the question of invention. In effect this means that if the Circuit Court of Appeals, and consequently the Supreme Court, should be of opinion there was invention, and that of a high order, they are powerless to so decree. We cannot concede the helplessness of appellate tribunals to right such a wrong and we think the authorities support such conclusion.

It will be observed that there is, and was, no dispute as to facts. No terms of art were involved. The specification was self-explanatory. The elements were all old. No issues of fact were raised. The defendant, by the testimony of its witness Christie, conceded the increased flexibility effected by the combination. In addition to which there was the presumption of law created by the grant of the patent. Such being the situation, the case falls within the principle laid down in Heald v. Rice, 104 U. S. 749, where, in reviewing an action of law on a patent, the Supreme Court, referring to the question of identity of invention, held:

"In the present case the question of the identity of the invention in the original and reissued patents is to be determined from their face by mere comparison, notwithstanding what was said in Battin v. Taggart (17 How. 74), and consistently with Bischoff v. Wethered (9 Wall. 812), according to the rule laid down in Seymour v. Osborne (11 Wall. 516), and Powder Company v. Powder Works, supra. That is, if it appears from the fact of the instruments that extrinsic evidence is not needed to explain terms of art, or to apply the descriptions to the subject-matter, so that the court is able from mere comparison to say what is the invention described in each, and to affirm from such mere comparison that the inventions are not the same, but different, then the question of identity is one of pure construction, and not of evidence, and consequently is matter of law for the court, without any auxiliary matter of fact to be passed upon by a jury, if the action be at law."

Moreover, the case falls within the principle laid down in Singer v. Cramer, 192 U. S. 275, where, in reviewing an action at law and referring to the question of infringement, which is more akin to a question of fact than is the question of invention, the Supreme Court (the italics are ours) said:

"From the view we take of the case it is unnecessary to consider and decide any other assignment than that based upon the exception to the refusal of the court, at the close of all the evidence, to instruct a verdict for the defendant on the ground that 'no infringement whatever had been shown.' *As in each of the patents in question it is apparent from the face of the instrument that extrinsic evidence is not needed to explain terms of art therein, or to apply the descriptions to the subject matter, and as we are able from mere comparison to comprehend what are the inventions described in each patent and from such comparison to determine whether or not the Diehl device is an infringement upon that of Cramer, the question of infringement or no infringement is one of law and susceptible of determination on this writ of error.*"

This statement is, in substance, taken from Heald v. Rice, 104 U. S. 749, which was a review of an action at law involving the validity of a reissued patent and where the question of invention had to be determined, for if the original patent and the reissue were not for the same invention, the reissued one was invalid. In addition to the substance of what we quote above, the Court held in Heald v. Rice, supra, that "the question of identity is one of pure construction and not of evidence, and consequently is matter of law for the court, without any auxiliary matter of fact to be passed upon by a jury, if the action be at law."

The same principle was followed in Market St. Rwy. Co. v. Rowley, 155 U. S. 625, where the Court reviewed the action of the court below in an action of law on a patent. Therein the Court said:

"Did the court below err in refusing to instruct the jury to find a verdict for the defendant on the ground that the patent sued on was void for want of novelty?

The defendant put in evidence a number of patents prior in date to the plaintiff's, and asked the court to compare the inventions and devices therein described with those

claimed by the plaintiff. No extrinsic evidence was given or needed to explain terms of art, or to apply the descriptions to the subject matter, so that the court was able, from mere comparison, to say what was the invention described in each, and to affirm from such mere comparison whether the inventions were or were not the same. The question was, then, one of pure construction and not of evidence, and consequently was matter of law for the court, without any auxiliary fact to be passed upon by the jury.

If, upon the state of the art as shown to exist by the prior patents, and upon a comparison of the older devices with those described in the patent in suit, it should appear that the patented claims are not novel, it becomes the duty of the court to so instruct the jury."

The opinions in each of the three cases cited above show that the questions of infringement or validity in each were much more involved and complicated than the simple one before us. Had the present case been tried with a jury, it is clear that with no issue of fact involved, with the presumption of validity created by the grant of the patent, with the affirmative testimony of defendant's witness Christie showing gained flexibility, with no contradictory testimony whatever, it would have been the duty of the court to instruct the jury the patent was valid and infringed. That jury trial was waived in no way changed this question of law into one of fact or prevents this Court from reviewing the action of the trial Judge in holding this patent invalid.

The length of this opinion leads us not to enter into a discussion of the other points argued on behalf of defendant. All of them have had due consideration. We limit ourselves to saying we find nothing in the proceedings in the patent office to affect the validity of Gray's claims. His original application had an undue number of claims and duplications in many cases, and these were cut down. But we note that his specification sets forth one, and one only, basic alleged invention, namely, the close-wound inner and the open-wound enveloping coil which were clearly described, illustrated in drawing, and carried into claims one and two by the terms, "in a mechanism of the nature described", and "substantially as described", or, as said in Seymour v. Osborne, 11 Wall. 516: "Where the claim immediately follows the description of the invention it may be construed in connection with the explanation contained in the specifications,

and where it contains words referring back to the specifications, it cannot properly be construed in any other way." Such device was not shown in the cited prior patents and, therefore, required no modification of the claims, and these claims were never modified beyond a minor change in adding an omitted element, viz: "a barrel in the outer head". Indeed, no reason appears precluding the allowance of patent protection for Gray's novel combination of the inner close-wound and the enveloping open-wound coil which the defendant has exactly duplicated. So holding, the judgment below is reversed, a new trial is granted, and the record remanded for due procedure in accord with this opinion.

A true copy. Teste:

——— ———, Clerk of the United States Circuit Court of Appeals for the Third Circuit.

IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT, OCTOBER TERM, 1932

No. 4986

CHARLES B. GRAY, Appellant,

vs.

EASTMAN KODAK CO. et al., Appellees

On appeal from the District Court of the United States, for the Eastern District of Pennsylvania

This cause came on to be heard on the transcript of record from the District Court of the United States for the Eastern District of Pennsylvania and was argued by counsel.

On consideration whereof, it is now here ordered and adjudged by this Court that the judgment of the said District Court in this cause be, and the same is hereby, reversed, with costs, a new trial granted, and the case remanded for further procedure in accordance with the opinion of this Court.

Philadelphia, August 22, 1933.

Per Curiam:

Buffington, Circuit Judge.

Endorsements: 4986. Order Reversing Judgment with Costs, etc. Rec'd & Filed Aug. 22, 1933. Wm. P. Rowland. Clerk.

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IN THE

[redacted] COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 4,[redacted]. [redacted] TERM, 1933.

CHARLES B. GRAY,

Appellant,

v.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC.,

Appellees.

PETITION FOR REHEARING.

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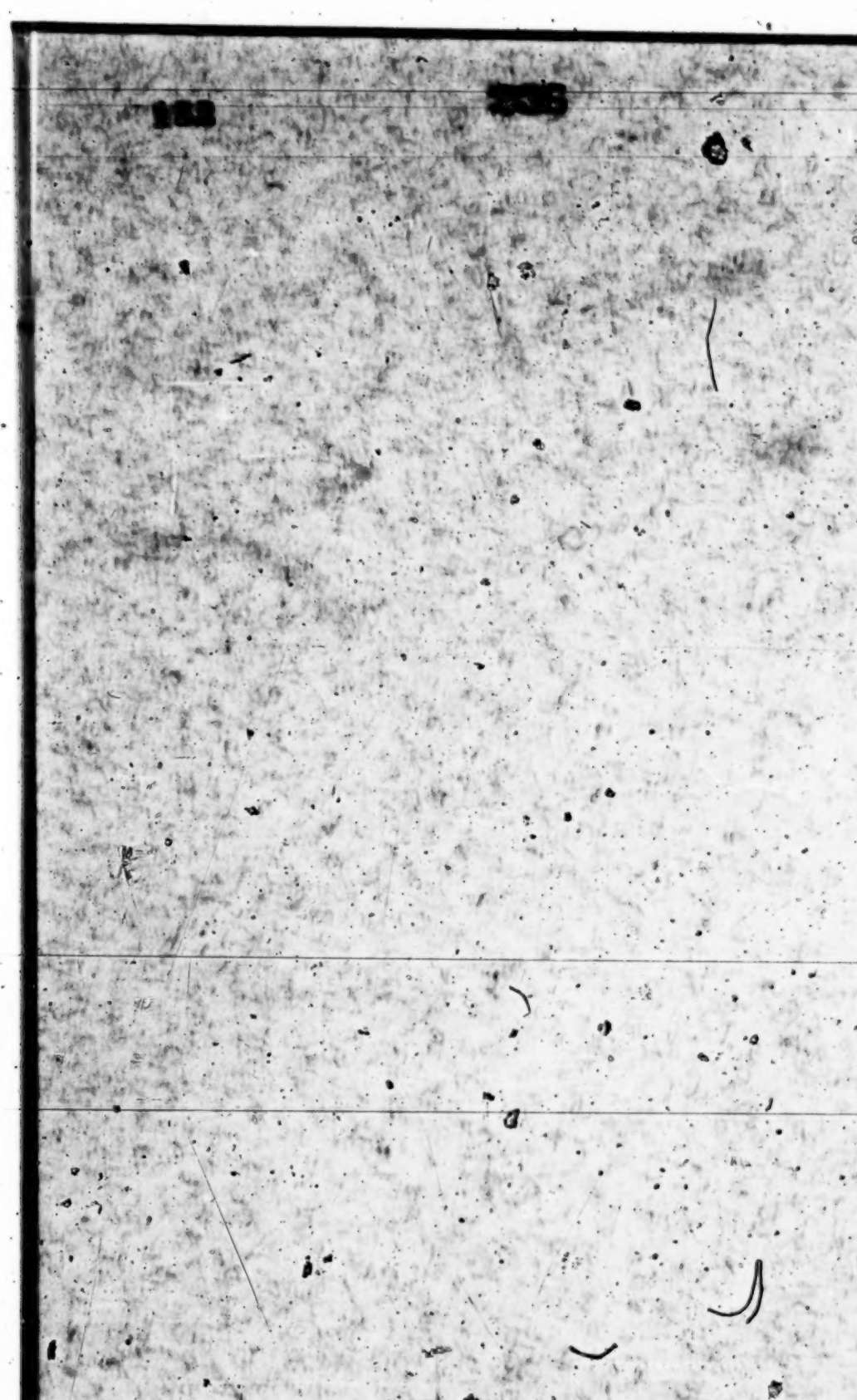
FILED & FILED

SEP 21 1933

WILLIAM P. ROWLANDS,
Clerk

ALLEN, LANE & SCOTT, PRS., PHILADELPHIA.



In the United States Circuit Court of Appeals for the Third Circuit.

No. 4986. October Term

Charles B. Gray, Appellant,

v.

Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Appellees.

PETITION FOR REHEARING.

On behalf of appellees, we respectfully petition for rehearing.

The petition is based on the following points:

1. The opinion does not adequately state the reasons moving this Court to overrule appellees' challenge to its jurisdiction to review the conclusions of the trial Judge upon which he adjudged claims 1, 2, 5 and 6 of Gray's patent invalid and claim 3 not infringed.

2. The provisions of Section 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875) apply to this case and govern the scope of review by this Court.

3. The question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention is a question of fact even where there is no dispute as to what the improvement was or what was in the prior art. In reaching a contrary conclusion this Court has apparently overlooked the decision of the Supreme Court in *Thompson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S. 445, 446. The decisions cited in support of the position taken by this Court are inapposite.

4. The decision of this Court that it has power to review the findings of the trial Court is in direct conflict with the decisions of other Circuit Courts of Appeals holding that the question of law whether or not there was any substantial evidence to sustain the findings of the trial Judge is, by force of Sections 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875), reviewable only when a request or motion is made, denied, and excepted to, or some other like action is taken which presents that question to the trial Court and secures its ruling thereon during the trial.

5. If this Court holds that power to review the findings of the trial Court results from the provisions of Section 269 of the Judicial Code (28 U. S. Code Sec. 391) its decision is in direct conflict with the decision of the Court of Appeals for the Eighth Circuit in *Allen* v. *Cartan & Jeffrey Co.*, 7 F. (2d) 21.

6. This Court has failed to understand appellees' contention that Gray's acquiescence in the rejection of claim 17, during the prosecution of his application, precludes a construction of the word "means" in claims 1 and 2 of his patent which would make them identical with the rejected claim; or, if it has understood the contention, has failed to state adequately the grounds upon which it holds the contrary.

7. This Court failed to distinguish between invention and the attainment of an improved result in holding that

Christie's testimony answered the contention that Gray's device was a mere aggregation of old elements.

8. The presumption of invention that ordinarily flows from the issuance of a patent cannot have application here for the reason that the patent office expressly held that the use of a coiled wire tube for the intervening means is not patentable.

9. It is not true, as stated at p. 10 of the opinion, that "the contention of lack of invention was evidently an afterthought, for at the first trial, no such contention was made."

10. It is not true, as stated at p. 10 of the opinion, that the trial Judge "made no finding of fact" on the question whether the conjoint use of a close wound inner coil and open wound exterior coil involved invention.

1. The opinion does not adequately state the reasons moving this Court to overrule appellees' challenge to its jurisdiction to review the conclusions of the trial Judge upon which he adjudged claims 1, 2, 5, and 6 of Gray's patent invalid and claim 3 not infringed.

Counsel for appellees directly challenged the jurisdiction of this Court to review the District Court's decision holding claims 1, 2, 5, and 6 of Gray's patent invalid, and claim 3 not infringed.

It was contended (1) that the cause before this Court is an action at law tried and determined, by stipulation of the parties, without a jury, and governed, therefore, by the provisions of Sections 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875) which so limit the scope of review in actions to which they apply as to render the de-

cision of the trial Court conclusive on all matters of fact and to prevent any inquiries into the conclusions of law embodied therein, except in so far as the rulings during the progress of the trial were excepted to and duly preserved by bill of exceptions; (2) that by force of Sections 649 and 700 of the Revised Statutes the conclusions of the trial Court* are reviewable only on the ground that they are not supported by any substantial evidence; (3) that whether or not there was any substantial evidence to sustain the conclusions of the trial Court is a question of law reviewable, under the provisions of Sections 649 and 700 of the Revised Statutes, only when a request or motion was made which presented that question to the trial Court and secured its ruling thereon during the trial; (4) that even though such a ruling is secured during the progress of the trial there can be no review of the question unless the ruling was excepted to at the time and duly preserved by bill of exceptions; (5) that the question whether there was any substantial evidence to support the conclusions of the trial Judge was not raised by plaintiff in this case during the progress of the trial either by a request for special findings, by motion for judgment, or otherwise; (6) that appellant's bill of exception fails to disclose the reservation of any exceptions to "the rulings of the Court in the progress of the trial."

In answer to these contentions counsel for appellant filed

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*These conclusions are set forth in the opinion of the District Court (R. 205) as follows:

"1. The combination of closed coil inner thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together."

"2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of the patent."

"3. Claims 1 and 2 are anticipated."

"4. Claim 3 is not infringed."

"5. Claims 5 and 6 are invalid because United States patent No. 1,297,327, to Dakin and Underwood antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion '1' applies to these claims."

a brief in which it was made clear that the only question intended to be raised by appellant's assignment of errors was whether or not there was any evidence in the record to support the findings of the trial Judge.* They did not deny that the case is governed, so far as the scope of review is concerned, by Sections 649 and 700 of the Revised Statutes; nor did they deny that in cases governed by those statutes the findings of the trial Court are reviewable only on the ground that they are not supported by any substantial evidence. They denied appellant's failure to raise this question during the progress of the trial; and denied that the bill of exceptions failed to disclose an exception to such a ruling taken at the time. And, finally, the proposition was advanced that an appellate court, by virtue of Section 269 of the Judicial Code (28 U. S. Code Sec. 391), has power, even in cases governed by Sections 649 and 700 of the Revised Statutes, to review the question of law whether the judgment of the trial Court is sustained by any substantial evidence, even though that question was not raised in the trial Court or excepted to during the trial and preserved by bill of exceptions.

The opinion filed by this Court merely states, in substance, that the evidence in this case supports only an affirmative answer to the question whether what Gray did required the exercise of the faculty of invention, and that this being so, the fact that a jury was waived does not prevent an appellate

*On page 7, paragraph 2, of appellant's answer on brief opposing appellees' motion to dismiss the appeal, counsel for appellant say:

> "It should be noted that the appellant in this case is not asking this Court to review the evidence on any point whatever. He is merely asking the Court to find that the conclusions by which the court below, from evidence and documents which are undisputed, were erroneous. In other words, these conclusions are not supported by any evidence or anything in the record."

Again, on page 8, paragraph 3, second sentence, counsel for appellant say:

> "The special findings made by the court below are erroneous, as appellant claims, because not sustained by anything in the record."

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court from reviewing the finding of the trial Court that what Gray did involved no invention.*

There can be no doubt but that this is a decision holding this Court has power to pass upon the question whether there is any substantial evidence to support the finding of the trial Court on the question of invention. But the opinion of the Court does not state whether this conclusion is based upon the view that Sections 649 and 700 of the Revised Statutes have no application to this case, or upon the view that those statutes do not impose as a prerequisite for review of the question of law whether the findings of the trial Court are sustained by any substantial evidence that the specific question shall have been presented and ruled upon during the trial and the ruling excepted to at the time and presented by a bill of exceptions, or whether the conclusion of the Court is based upon a finding of fact that appellant did present the question to the trial Court and secure a ruling thereon during the progress of the trial and did except to the ruling at the time and preserve the exception by the bill of exceptions. So far as appears from the opinion, these points, particularly relied upon by appellees, were not considered by this Court. All mention of Sections 649 and 700 of the Revised Statutes is omitted. There is no mention of any one of the many decisions cited in our briefs in support of the contention that where those statutes apply the question of law whether or not there is any evidence to sustain the findings of the trial court is reviewable only when properly raised during the trial and a ruling thereon obtained which is excepted to and preserved by bill of exceptions. The opinion does mention (Opinion p. 2)

* The exact language of the opinion is as follows (Opinion, p. 19):

"Had the present case been tried with a jury, it is clear that with no issue of the fact involved, with the presumption of validity created by the grant of the patent, with the affirmative testimony of defendant's witness Christie showing gained flexibility, with no contradictory testimony whatever, it would have been the duty of the court to instruct the jury the patent was valid and infringed. That jury trial was waived in no way changed this question of law into one of fact or prevents this Court from reviewing the action of the trial Judge in holding this patent invalid."

bill of exceptions "to the rulings, opin- of the trial court, but there is no discus- point made by appellees that the bill of excep- discuss the reservation by appellant of any during the progress of the trial to any

nothing more need be said to per- of the propriety of supplementing the the end that the reasons which to its conclusion may be fully understood. to the parties, to the public, to this Court, which may be asked to review the decision, by an opinion that fully states which led the Court to make it is, of course, importance of such an opinion is where, as here, the question in issue is the committed by Congress to Circuit Courts challenge to the jurisdiction of a court power is fully and persuasively shown.

The provisions of Sections 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875) apply in this case and govern the scope of review by this Court.

The opinion to mention Sections 649 and Statutes or any of the many cases inter- preting them, cited in our briefs," suggests that this Court affirming its power to review the trial Court is founded upon the view that apply it and govern the scope of review. This view is clearly untenable.

by their express terms, are issue of fact in any civil cause in a tried and determined by the Court without whenever the parties, or their

United States, 272 U. S. 658, 673.

attorneys of record, agree to waive a jury by a stipulation in writing filed with the clerk."

In the instant case, by plea of the general issue and notice of special matters of defense (R. 21, 22, 24, 26, 27) defendants raised a number of "issues of fact," among them the issue of invention, the issue of anticipation, and the issue of infringement. The parties, by their attorneys of record, stipulated in writing that the issues so raised be tried to the Court without a jury upon the testimony taken at the jury trial (R. 197), and those issues were tried and determined by the trial Court (Opinion, sur pleadings and proof, R. 198, 205).

It is stated in the opinion of this Court (p. 2) that,

> "In substance, the trial was a quasi demurrer. No witnesses were examined. On final hearing neither party asked for any special findings of fact, for there were no disputed facts."

These statements are inaccurate.

The cause was submitted to the Court below for trial and determination of the issues raised by the pleadings upon the record already made in the first trial, according to the stipulation (R. 197):

> "as if the testimony and exhibits offered in evidence at the trial before Judge Dickinson and a jury had been duly offered in evidence before the Judge who may be assigned to hear this case, subject to any objections which appear on the record, and that all motions made by either party at the said trial shall be deemed to have been made before the Judge trying the case. * * *"

It would be difficult, if not impossible, to find words more apt to express the intention of the parties to have the issues raised by the pleadings tried and determined exactly as in other cases save for the substitution of the Court for the jury as the fact finding tribunal. No *additional* witnesses were examined, it is true, but the trial Court had before

it the testimony of all the witnesses who testified upon the first trial.

The idea that "there were no disputed facts" to be determined by the trial Court is reiterated throughout the opinion. But whatever support there may be for that idea if limited to various specific collateral facts, such as the state of the prior art, the inventions and devices described in prior patents, the nature of defendants' accused devices, etc., there is no warrant whatever in the record for holding that the ultimate facts which go to make up plaintiff's cause of action and defendants' grounds of defense—invention, anticipation, and infringement,—were not in dispute. These ultimate "issues of fact" were never conceded by defendants, and they remained for trial and determination by the trial Judge, who so understood (See opening paragraph of opinion of Judge Kirkpatrick, R. 198). This Court has evidently confused these ultimate "issues of fact" which arose on the pleadings, with "questions" of fact which may be determined either as a matter of fact or a matter of law, depending upon the sufficiency of the evidence to support more than one conclusion respecting the ultimate "issues of fact."

3. The question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention is a question of fact even where there is no dispute as to what the improvement was or what was in the prior art. In reaching a contrary conclusion this Court has apparently overlooked the decision of the Supreme Court in Thompson Spot Welder Co. v. Ford Motor Co., 265 U. S. 445, 446. The decisions cited in support of the position taken by this Court are inapposite.

The decision of this Court that it has power to review the decision of the trial Judge on the question of invention is based, in part at least, upon the view that the question whether an improvement over the prior art requires mere

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mechanical skill or the exercise of the faculty of invention is a matter of law where there is no dispute as to what the improvement was or what was in the prior art.

In reaching this conclusion the decision of the Supreme Court in *Thompson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S. 445, 446 has apparently been overlooked. There is no mention of it in the opinion. In that case the Supreme Court said (p. 446):

> "The question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention, *is one of fact*, and in an action at law for infringement is to be left to the determination of the jury. *Keyes* v. *Grant*, 118 U. S. 25, 36, 37; *Holmes* v. *Truman* (C. C. A.) 67 Fed. 542, 543; *Hall* v. *Wiles* (C. C.), 2 Blatchf. 194, 11 Fed. Cas. 280, 283; *Poppenhausen* v. *Falke* (C. C.), 5 Blatchf. 46, 19 Fed. Cas. 1052, 1054; *Shuter* v. *Davis* (C. C.), 16 Fed. 564, 568; *Blessing* v. *Copper Works* (C. C.), 34 Fed. 753, 754."

In support of the view taken by this Court the opinion cites the decisions of the Supreme Court in *Heald* v. *Rice*, 104 U. S. 749, *Market Street R. Co.* v. *Keasley*, 155 U. S. 625, and *Singer* v. *Cramer*, 192 U. S. 275. These cases, however, do not support the proposition to which they are cited. They merely hold that the question of *identity* may be a matter of law. Thus, in *Heald* v. *Rice* the validity of a reissued patent was challenged on the ground that the reissue patent was not for the same invention as the original patent. In *Market Street R. Co.* v. *Keasley*, the validity of the patent in suit was challenged on the ground that the inventions and devices described in prior patent disclosed the same invention as the patentee claimed. In *Singer* v. *Cramer*, the question was whether the Diehl device, upon which the charge of infringement was based, was substantially the same as that of Cramer. Where the question is whether an improvement over the prior art involved the exercise of invention, novelty over the prior art is conceded, and the question of identity is not an issue.

4. The decision of this Court that it has power to review the findings of the trial Court is in direct conflict with the decisions of other Circuit Courts of Appeal holding that the question of law whether or not there was any substantial evidence to sustain the findings of the trial Judge, is, by force of Sections 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875), reviewable only when a request or motion is made, denied, and excepted to, or some other like action is taken which presents that question to the trial Court and secures its ruling thereon during the trial.

It is the essence of the decision of this Court holding that it has power to review the findings of the trial Court that "Had the present case been tried with a jury, * * * it would have been the duty of the court to instruct the jury the patent was valid and infringed," because there was no substantial evidence to sustain any other conclusion (Opinion p. 19).

That this is a question of law which arises in the progress of the trial and is reviewable *only* when a ruling on that specific question is evoked during the progress of the trial either by motion for judgment at the close of the testimony or by a request made for a declaration of law, excepted to at the time, and duly preserved by a bill of exceptions, has been held by the Courts of Appeals for the First, Fourth, Sixth, Eighth and Ninth Circuits, as well as by the Supreme Court.

The Court of Appeals for the First Circuit so held in *Arthur C. Harvey Co. v. Maley*, 60 Fed. (2d) 97, affirmed by the Supreme Court March 13, 1933 (1 U. S. Law Week Adv. Op. Vol. 77, No. 10, at p. 621);

The Court of Appeals for the Fourth Circuit so held in *Peoples Bank v. International Finance Corp.*, 30 F. (2d) 46;

The Court of Appeals for the Sixth Circuit so held in *Humphreys v. First National Bank*, 75 Fed. 852;

Cleveland etc. Coal Co. v. Main Island Creek Coal Co., 207 Fed. 60; and *Agler v. Cleveland etc. R. Co.*, 16 Fed. (2d) 455.

The Court of Appeals for the Eighth Circuit has so held in a number of cases, including *U. S. Fidelity, etc. Co. v. Board of Commissioners*, 145 Fed. 144; *Wear v. Imperial Windpie Glass Co.*, 224 Fed. 60; *United States v. Atchison, etc. R. Co.*, 270 Fed. 1; *Allen v. Cartan & Jeffrey Co.*, 7 F. (2d) 21; *First National Bank v. Littrer*, 10 F. (2d) 447; and *Gerlach v. Chicago, R. I. etc. R. Co.*, decided June 26, 1933, and reported in 18 U. S. Patents Quarterly Advance Sheets at p. 90. The case is as yet unreported in the Federal Advance Sheets.* The case last mentioned—*Gerlach v. Chicago, R. I. etc. R. Co.*—was an action at law brought to recover damages for the alleged infringement of patents, and was tried by the Court without a jury. At the close of all the evidence, the Court made findings of fact and conclusions of law in favor of the defendant, and based thereon entered judgment dismissing the action upon its merits. On the appeal from the judgment, the appellant sought to have the Court of Appeals pass upon the question of the sufficiency of the evidence. This the Court of Appeals refused to do, pointing out that by reason of the provisions of Sections 649 and 700 of the Revised Statutes it could not consider that question in the absence of any action by the plaintiff bringing that question before the trial Court.

The Court of Appeals for the Ninth Circuit has held that the question of law whether or not there was any substantial evidence to support findings of a trial Court in cases tried without a jury is reviewable only when that specific question has been presented to the trial Court and its ruling secured thereon during the trial, in the following cases: *Gillespie v. Hongkong & Shanghai Banking Corp.*, 23 F. (2d) 670; *Macomber v. Goldthwaite*, 22 F. (2d) 638; and *Phoenix Securities Co. v. Dittmar*, 224 Fed. 60.

The Supreme Court has so held in each of the following

* A copy of this opinion was forwarded to the Judges of this Court by counsel for appellees on July 25, 1933.

cases: *Fleischmann Co. v. United States*, 270 U. S. 349; *Martinton v. Fairbanks*, 112 U. S. 670. In *Martinton v. Fairbanks*, the Court said (p. 672):

> "If the question was whether all the evidence was sufficient in law to warrant a finding for the plaintiff, he should have presented that question, by a request for a definite ruling on that point."

5. If this Court holds that power to review the findings of the trial Court results from the provisions of Section 269 of the Judicial Code (28 U. S. Code, Sec. 391), its decision is in direct conflict with the decision of the Court of Appeals for the Eighth Circuit in Allen v. Cartan & Jeffrey Co., 7 F. (2d) 21.

As we have already pointed out, there is nothing in the opinion to indicate the basis of this Court's decision that it has power to review the findings of the trial Court notwithstanding Sections 649 and 700 of the Revised Statutes. But the fact that appellant's counsel advanced the proposition that such power results from Section 269 of the Judicial Code providing that appellate courts

> "shall give judgment after an examination of the entire record before the court, without regard to technical errors, defects, or exceptions which do not affect the substantial rights of the parties."

suggests that this Court may have adopted that view.

If this is the holding of the Court, its decision is in direct conflict with the decision of the Court of Appeals for the Eighth Circuit in *Allen v. Cartan & Jeffrey Co.*, 7 Fed. (2d) 21.

In that case the Court of Appeals for the Eighth Circuit had before it on appeal a case tried without a jury. The decision of the Court was that the question of law whether or not there was any substantial evidence to sustain the findings of the trial Court could not, under Sections 649

and 700 of the Revised Statutes, be reviewed because it had not been raised below, and that this was so regardless of the provisions of Section 269 of the Judicial Code.

Attention is also directed to the case of *Gillespie* v. *Hongkong & Shanghai Banking Corp.*, 23 F. (2d) 670, decided by the Court of Appeals for the Ninth Circuit. This was also a case tried without a jury and resulted in a holding that the necessity for raising questions for review by appropriate action in the trial Court has not been abolished by Section 269 of the Judicial Code.

6. This Court has failed to understand appellees' contention that Gray's acquiescence in the rejection of claim 17, during the prosecution of his application, precludes a construction of the word "means" in claims 1 and 2 of his patent which would make them identical with the rejected claim; or, if it has understood the contention, has failed to state adequately the grounds upon which it holds the contrary.

Claims 1 and 2 of Gray's patent describe the inner thrust member element of his combination as follows:

> "means intervening said stem and slide member for the transmission of endwise motion from said stem to said slide member."

It will be noted that the element is not restricted to any particular form, it might be a coiled wire tube or a straight wire so long as it connects the two slidable parts and serves to transmit endwise motion from the stem to the slide member.

As stated by the trial Court, the combination described, "if read as stated, * * * was clearly anticipated by the British patents," which show the identical combination using, however, a straight wire and not a coiled wire tube. If anticipation is to be avoided, the claims must be con-

strued to read "a coiled wire tube" instead of the unqualified word "means."

Appellant contended that the only means for transmitting endwise motion shown in the specification, is a coiled wire tube clearly described and illustrated in the patent drawing, and that the phrases "in a mechanism of the nature described," and "substantially as described," used in claims 1 and 2, qualify the word "means" and permit or require the claims to be construed as calling for "a coiled wire tube."

Appellees contended that Gray, during the prosecution of his application, presented a claim identical with claims 1 and 2, except for the fact that it called for "a coiled wire tube" instead of "means"; that the claim so presented was rejected by the Patent Office;* and that the Patent Office having rejected it, and Gray having acquiesced in such rejection, he cannot now have the benefit of his rejected claim, or such a construction of the claims that were allowed as would be equivalent thereto.

The trial Court found that Gray had made the claim which this Court now finds corresponded with the specification and drawings, and was Gray's real invention; that the patent office rejected that claim; that Gray acquiesced in such rejection; and that under the decision of the Supreme Court in *U. S. Repair, etc. Co.* v. *Assyrian Asphalt Co.*, 183 U. S. 591, Gray, having abandoned the claim for "a coiled wire tube," may not now claim the benefit of his rejected claim or such a construction of his present claim as would be equivalent thereto.

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* The claim was twice rejected by the Patent Office. In the rejection of February 25, 1918, the Examiner said (File Wrapper, pp. 19, 20):

> "To construct the transmission element of a coiled wire tube is not patentable in view of German to Wermann * * *."

Later, rejecting the claim again, the Examiner said (File Wrapper, p. 26):

> "The use of the 'coiled wire tube' for the 'intervening means' defined in claim 1 is not patentable in view of the German patent of record."

Speaking of the *Assyrian Asphalt Case,* the trial Court said:

> "The case is so nearly on all fours with U. S. Repair etc. Company *v.* Assyrian Asphalt, 183 U. S. 591, that the opinion in that case may be applied to this with a very little paraphrasing, * * *"

This court apparently did not understand the contentions made by appellees. We are led to this conclusion by the statement in the opinion (p. 19) that "we find nothing in the proceedings in the patent office to affect the *validity* of Gray's claims." The contention made by appellees is not whether the patent office proceedings affected the validity of the claims allowed, but whether the restriction to a "coiled wire tube" which appeared in cancelled claim 17 can be read into them. The statement in the opinion (p. 19) to the effect that no modification of the claims was required; leads to the same conclusion. In addition, the failure to mention whether, in the opinion of the Court, Gray did present a claim identical with claims 1 and 2 except that it called for a "coiled wire tube" instead of "means," is inexplicable except on the hypothesis that appellees' contentions were not understood. The same is true of the omission to state whether the patent office rejected the claim and whether Gray acquiesced therein. These questions are not answered by the statement in the opinion that Gray's original application "had an undue number of claims and duplications in many cases, and these were cut down." There is no discussion of whether these facts, if true, would stand in the way of such a construction of claims 1 and 2 as would be equivalent to the rejected claim. There is no discussion of the decision of the Supreme Court in the *Assyrian Asphalt Case,* particularly relied upon by appellees and by the Court below, nor is there any discussion of the case of *Morgan Envelope Co.* v. *Albany Paper Co.,* 152 U. S. 425, discussed in detail in our brief at pp. 18-21, and brought forward as dispositive of this case.

7. This Court failed to distinguish between invention and the attainment of an improved result in holding that Christie's testimony answered the contention that Gray's device was a mere aggregation of old elements.

This Court, in arriving at the conclusion that it required invention to conceive the idea of a closed coil inner thrust member and an open coil outer sheath member, gave great weight to the testimony of defendant's witness, Christie, that such a device had greater flexibility than one in which the inner thrust member was a straight wire, or one in which the outer member was a closed coil.

It is well settled that mere superiority does not make aggregation patentable. In practically every case in which the Supreme Court has held a device unpatentable as an aggregation, the superior utility of the device has been urged upon that Court without effect.

In *Grinnell Washing Machine Co.* v. *E. E. Johnson Co.*, 247 U. S. 426, 434, it was said:

> "Phillips may have produced a more convenient and economical mechanism than others who preceded him, but superiority does not make an aggregation patentable."

The reason why this is so was well expressed in *Bryant Electric Co.* v. *Reno Sales Co.*, 16 F. (2d) 789, 792, where it was said:

> "A skilled mechanic is all that is needed to assemble. There is no change in function, or in results, except possibly it may work more efficiently or safely, or less expensively, but that which has been 'discovered' has already been disclosed."

8. The presumption of invention that ordinarily flows from the issuance of a patent cannot have application here for the reason that the Patent Office expressly held that the use of a coiled wire tube for the intervening means is not patentable.

This Court, holding that Gray's real invention was the substitution of a coiled wire tube as the inner thrust member element of a cable release having an open coil outer sheath member, has decided that he is entitled to have claims 1 and 2 construed so as to read "a coiled wire tube" instead of the unqualified word "means."

In discussing the question of invention, the opinion (p. 12) makes the remarkable statement that this question "was decided in favor of the patentee" by the patent office, and says that "the trial Judge failed to give due weight to the presumption of invention arising from the grant of the patent."

The patent office, however, as we have heretofore pointed out, expressly held that the use of a coiled wire tube for the intervening means is not patentable and rejected claim 17 which claimed what is now said to be Gray's invention (See File Wrapper pp. 19-20, 26).

9. It is not true, as stated at p. 10 of the opinion, that "the contention of lack of invention was evidently an afterthought, for at the first trial no such contention was made."

The issue of lack of invention was directly raised in defendants' points for charge, numbered 19, 20, 22, 24, 25 and 27 (R. 187-190). The quoted statement of Judge Dickinson was taken as a denial of these requests and exceptions thereto were taken in accord with his statement at the end of the general charge that the points submitted were disaffirmed so far as not affirmed in the general charge (R. 173). The withdrawal of the issue of invention by the trial Court was vigorously urged by defendants-appellees as a reason why a new trial should be granted.

It is not true, as stated at p. 10 of the opinion, that the trial Judge "made no Finding of Fact" on the question whether the conjoint use of a close wound inner coil and open wound exterior coil involved invention.

It is the opinion that the trial Court confined ... expression of opinion" on this point ... to the remarks of the trial Judge ... quotation at the bottom of page 10 and at the top of ... Court's opinion the same certainly cannot ... carefully stated conclusion (R. 205) that

> ... commission of closed coil inner thrust member ... sheath member is not patentable ... were known to the prior art and ... operation or functional relationship ... them together.

... do not think they could have in ... upon in this case we want to ... assertions of fact that appear in ...

... statement on page 6 of the opinion and ... elsewhere in the opinion that "up to ... complex like Eastman continued ... with the pneumatic push." The ... in early 1913 Eastman Com- ... having a wire push member ... (Christie Q. 5, R. 141).

... statements on pages 9 and 15 of the opinion ... closed making other types" after ... and examined. The undisputed ... the manufacture of other types continues ...

... at the bottom of page 15 of the opinion ... evidently could not understand ... was affected" ignores com-

pletely the testimony discussed at pp. 30-38 of our brief showing that Eastman Company was fully aware of the advantages and had completely planned the production of a release embodying both a coiled wire thrust member and a spaced coil outer casing and had made a drawing showing them in combination before it ever heard of Gray or of his cable release.

Respectfully submitted,

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Attorneys for Appellee.

WILLIAM H. DAVIS,
GEORGE E. MIDDLETON,
CHAS. W. RILEY,
BOYD LEE SPAHR,
ALLEN HUNTER WHITE,
Of Counsel.

CERTIFICATE

I certify that this petition for rehearing, in my opinion, is well founded in law and in fact, and that it is not filed for the purposes of delay.

ALLEN HUNTER WHITE
Attorney for Petitioner

IN THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT, OCT. TERM, 1932

No. 4986

CHARLES B. GRAY, Appellant,

v.

EASTMAN KODAK COMPANY et al., Appellees

Sur Petition for Rehearing

And now, to wit: October 31, 1933, after due consideration, the petition for rehearing in the above entitled case is hereby denied.

Philadelphia, October 31, 1933.

Per Curiam:

Buffington, Circuit Judge.

Endorsements: 4986. Order Denying Petitions for Rehearing. Rec'd & Filed Oct. 31, 1933. Wm. P. Rowland, Clerk.

UNITED STATES OF AMERICA,
Eastern District of Pennsylvania,
Third Judicial Circuit, set:

I, Wm. P. Rowland, Clerk of the United States Circuit Court of Appeals for the Third Circuit, do hereby certify the foregoing to be a true and faithful copy of the original Transcript of Record and proceedings in this Court in the case of Charles B. Gray, Appellant, vs. Eastman Kodak Co. et al., Appellees, No. 4986, on file, and now remaining among the records of the said Court, in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the seal of the said Court, at Philadelphia, this 4th day of November, in the year of our Lord one thousand nine hundred and thirty-three and of the Independence of the United States the one hundred and fifty eighth.

Wm. P. Rowland, Clerk of the U. S. Circuit Court of Appeals, Third Circuit. (Seal United States Circuit Court of Appeals, Third Circuit.)

[fols. 245 & 245a] SUPREME COURT OF THE UNITED STATES

STIPULATION AS TO EXHIBITS—Filed Jan. 8, 1934

And now, to wit, this second day of December, 1933, come Thomas Raeburn White, Esq., counsel for respondent, and Allen Hunter White, Esq., counsel for petitioners, who stipulate and agree that none of the exhibits in the above entitled cause need be printed by the Clerk of the Supreme Court of the United States in connection with the docketing of the petition for writ of certiorari in the said cause and the consideration thereof by the Court; and that if the said writ of certiorari be granted by the Court, all of said exhibits, except the physical exhibits, shall be printed or photolithographed in the usual manner.

T. R. White, Allen Hunter White.

[fol. 245b] [File endorsement omitted.]

[fols. 246 & 246a] SUPREME COURT OF THE UNITED STATES

ORDER ALLOWING CERTIORARI—Filed February 5, 1934

The petition herein for a writ of certiorari to the United States Circuit Court of Appeals for the Third Circuit is granted. And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

Supreme Court of the United States

OCTOBER TERM, 1926

No. 709

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, AND EASTMAN KODAK STORES, INC., PETITIONERS,

vs.

CHARLES B. GRAY.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT.

PETITION FOR CERTIORARI FILED JANUARY 4, 1926.

CERTIORARI GRANTED FEBRUARY 1, 1926.

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 709

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, AND EASTMAN KODAK STORES, INC., PETITIONERS,

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VOL. II

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EXHIBITS.

Plaintiff's exhibit number:	Original	Print
1—Copy of United States letters patent No. 1,314,867	1	206
4—Letter from Joseph Knafll to H. M. Fell, of the Eastman Kodak Company, dated June 21, 1918	6	212
5—Letter of H. M. Fell to Joseph Knafll, dated June 24, 1918	7	213
6—Letter to H. M. Fell from Joseph Knafll, dated July 2, 1918	8	214
7—Letter to Joseph Knafll from F. W. Lovejoy, of the Eastman Kodak Company, dated July 10, 1918	9	215
10—Letter from Cyrus Kehr to the Eastman Kodak Company, dated September 26, 1919	10	216

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., FEBRUARY 15, 1934

—4580-C

11—Letter to Cyrus Kehr from the patent attorney of the Eastman Kodak Company, dated October 1919
12—Letter to Joseph Knaff from F. W. Lovejoy, dated December 2, 1919
13—Letter to C. B. Gray from A. K. Chapman, of the Eastman Kodak Company, dated October 31
36—Specification and list of parts for Autoset No. 9435
37—Eastman Kodak drawing No. 14511
38—Eastman Kodak drawing No. 23.701
39—Eastman Kodak drawing No. 9.507
40—Eastman Kodak drawing No. 15.131
41 Specification dated May 27, 1918
42—Specification dated March 14, 1920
43—Specification dated May 27, 1918 (original of No. 41)
44—Eastman Kodak drawing No. 15.132
Defendants' exhibit No. 1—File wrapper, contents and drawings in matter of letters patent No. 1,214,867
Defendants' exhibit number:
3—Eastman Kodak drawing No. 15.131
4—Eastman Kodak drawing No. 15.132
9—Specification bearing dates May 4, 1918, May 18, 1918, and May 21, 1918
10—Specification of Eastman Kodak Company sheets)
11—Letter to C. L. Jenks, signed J. A. Robertson, dated April 12, 1916
12—Letter to C. L. Jenks, signed J. A. Robertson, dated December 24, 1915
14—Letter dated December 12, 1917, from A. Hayes Ramsey, R. L. Stinchfield
16—Eastman Kodak Company drawing No. 9.511
17—X-ray photograph showing tip end of [illegible] release
18—United States patent to Edwards No. [illegible]
United States patent to Durfee No. [illegible]
United States patent to Jenkin & Underwood No. 1,297,327
British patent to Watson & Edwards No. [illegible] of 1905
British patent to Edwards & Watson No. [illegible] of 1905
British patent to Edwards & Watson No. [illegible] of 1906
German patent to Wegmann No. 147,372
Translation of specification of above German patent
Clerk's certificate

1,314,867.

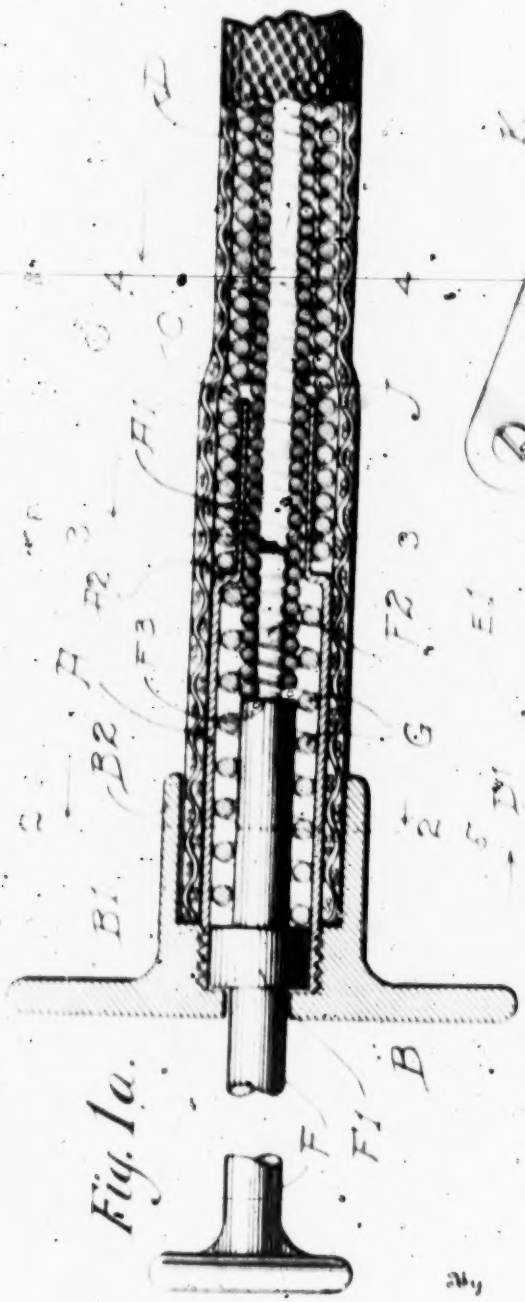


Fig. 1a.

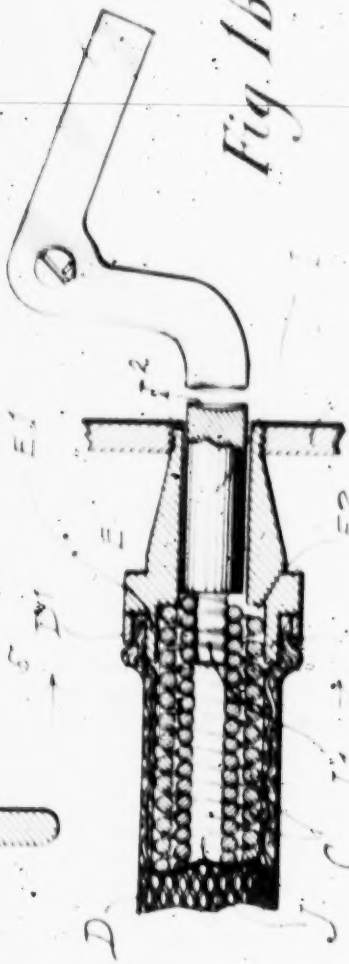


Fig. 1b.

Inventor
Charles B. Gray,
Cyrus Miller
Attorney

C. B. GRAY.
POWER TRANSMITTING MECHANISM.
APPLICATION FILED JUNE 7, 1918.

1,314,867.

Patented Sept. 2, 1919.

Fig. 3

Fig. 4

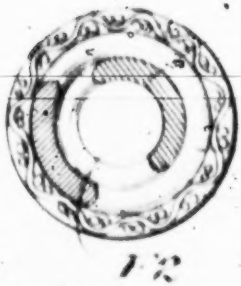


Fig. 2.

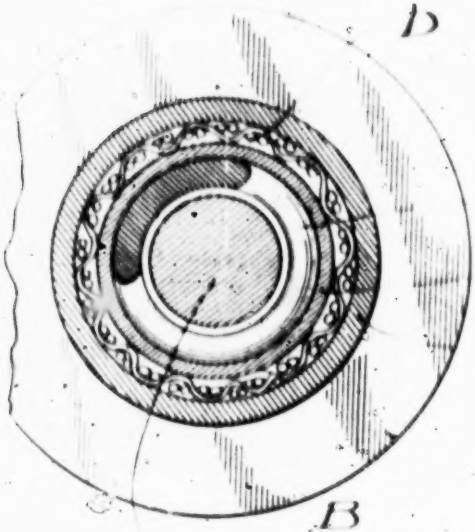
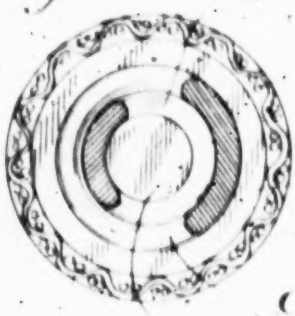


Fig. 5



G
H
B2

Inventor
Charles B. Gray,
By Cyrus Keller
Attorney

UNITED STATES PATENT OFFICE.

CHARLES B. GRAY, OF KNOXVILLE, TENNESSEE.

POWER-TRANSMITTING MECHANISM.

1,314,867. Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed February 7, 1918. Serial No. 216,885.

To all whom it may concern:

Be it known that I, CHARLES BAXTER GRAY, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Power-Transmitting Mechanism, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to mechanism for transmitting power through endwise reciprocation of a member of the mechanism. The mechanism is applicable for use as actuating means for the shutters of cameras, and as an actuating or releasing means for various kinds of apparatus.

The object of the invention is to produce such a transmitting mechanism in flexible form permitting repeated bending without injury to the mechanism, and in a form permitting the attainment of precise movement.

In the accompanying drawings,

Figures 1ª and 1ᵇ together present a longitudinal view of a mechanism embodying my improvement, portions being in section;

Fig. 2 is a section on the line, 2—2, of Fig. 1, looking toward the left;

Fig. 3 is a section on the line, 3—3, of Fig. 1, looking toward the left;

Fig. 4 is a section on the line, 4—4, of Fig. 1, looking toward the left;

Fig. 5 is a section on the line, 5—5, of Fig. 1, looking toward the right.

Referring to said drawings, A is a metallic tube or barrel having its left hand end screw-threaded into the contracted portion, B^1, of the outer head, B, whereby said barrel and said head are firmly but detachably joined to each other. The opposite end of said barrel is contracted to form a neck, A^1. At the junction of said neck with the body of said barrel is a shoulder, A^2. A stem, F, extends slidably through the head, B.

Within said head, the stem has an annular rib, F^1, which limits the movement of said stem toward the left or away from the neck, A^1, of the barrel, A. Between said annular rib and the shoulder, A^2, the stem, F is surrounded by an expanding coiled spring, G. Said spring abuts against the shoulder, A^2, and against the rib, F^1, and tends to move the stem, F, toward the left or away from the neck, A^1, so that; when said stem is free from pressure on its outer end in the direction of the barrel, the stem is held outward with the rib, F^1, bearing against the inner face of the wall of the head, B^1.

The neck, A^1, is loosely surrounded by the left hand end of a coiled spring wire tube, C. The right hand or inner end of said spring extends into an inner head, E. Said inner head has a tubular neck, E^1, in which is an annular shoulder, E^2, against which said spring abuts. Said spring rests loosely within said head. The head, B, and the head, E, are joined by a fiber fabric tube, D. At its left hand end, said fabric tube surrounds the barrel, A, and the head, B, has a tubular extension, B^2, surrounding said fabric tube. The fabric is secured to the barrel, A, by means of a suitable adhesive. At the right hand end, the fabric tube surrounds the neck, E^1, on the head, E, and a band, D^1, surrounds the fabric tube and binds the latter to said neck.

The coiled spring wire tube, C, is so wound as to leave spaces between the coils, and said tube is made long enough to cause it to be under compression endwise when the fiber fabric tube is under tension. Thus the fiber fabric tube is normally held under tension and the coiled spring wire tube, C, is normally exerting endwise pressure. And the fiber fabric tube limits the endwise expansion of said wire tube. The length of the fiber fabric tube and the coiled wire tube, C, and the spacing between the coils of the tube are so proportioned as to still leave spaces between the coils of the tube, C, when the latter is held under restraint by the fiber fabric tube against full endwise expansion. The spaces thus left between the coils of the tube, C, are sufficient to allow approach of adjacent coils toward each other at the inner side of the curve while there is limited or substantially no expansion of the coils at the outer side of the curve when the tube is bent.

On the inner or right hand end of the stem, F, is a neck, F^2, at the base of which is an annular shoulder, F^3. Said neck is surrounded by one end of a coiled wire tube, J. The opposite or right hand end of said tube extends around a neck, I^1, on a slide member, I, which is slidable endwise in the

head, E. The engagement between the tube, J, and the necks, F^2 and I^1, may be frictional; but said necks are preferably screw-threaded to conform approximately to the coils of the tube, J, in order that said tube may be threaded to said necks. The tube, J, is preferably so formed as to cause its coils to normally press firmly against each other, in order that there may be no lost motion when the stem, F, is pressed inward, in the direction of the head, E, the stem, F, pushing the tube, J, and the tube, J, pushing the slide member.

The slide member, I, may be regarded as the final member in the transmission. In the particular form shown in the drawings the outer end of said member has a concave face, I^2, adapted to bear against a pivoted member, K, which is to be moved by the outward movement of the slide member, the head, E, being screwed into a relatively stationary wall, L, and thus held in relation to the member, K.

The coils of the tube, C, are wound in one direction while the coils of the tube, J, are preferably wound in the opposite direction.

As above described, the tube, J, is held to the neck, F^2, of the stem, F, and the slide member, I, is held to the tube, J, by means of the neck, I^1. After unscrewing the head, B, from the barrel, A, the stem, F, together with the spring tube, J, and the slide member, I, may be drawn out endwise, toward the left, through the barrel, A, the diameter of the tube, J, and the slide member being of less diameter than the interior diameter of the tube, C.

The fabric tube, D, may be detached by removing the band, D^1, and softening or dissolving the adhesive by which said fabric is secured to the barrel, A.

This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, C, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely-wound, adapts itself to the bending without kinking.

Practice has shown that a mechanism of this construction may be bent an indefinite number of times without kinking or otherwise disabling the coiled wire tubes.

The reach of the slide member, I, may be adjusted by moving the tube, J, on both or either of the necks, F^2 and I^1. In this manner a very precise adjustment may be made.

The size of the mechanism is to be varied to conform to the amount of power to be transmitted and to the size of the apparatus with which the transmission mechanism is to be associated. For some purposes the mechanism may be as large or larger than shown by the drawings. For example, in power-driven vehicles, the mechanism may be made large and used for power transmission to some point distant from the driver, the stem, F, being used as a pedal.

I claim as my invention,

1. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

2. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

3. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and adjustably surrounding said stem and said slide

member for the transmission of endwise motion from said stem to said slide member, substantially as described.

4. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from the stem toward and to the slide member, the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head, said intervening means and said slide member and said stem are together removable, substantially as described.

5. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

6. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

In testimony whereof I have signed my name this 1st day of February, in the year one thousand nine hundred and eighteen.

CHARLES B. GRAY.

6

5'

6/21/13.

Mr.H.M.Fell,

% Eastman Kodak Co.,

Rochester, N.Y.,

Dear Harry-

I am enclosing a photograph taken of a cable release. I have a little device in that line, as you will notice, that is non-kinkable. We understand that those that are now being used have been giving trouble more or less by the cable getting a kink in it which usually interferres with the working of the shutter, especially is it so with a time exposure where the kink resists the spring and does not close the shutter, usually fogging the picture.

We have used a device like this for several months to try out before we considered putting it on the market and we find that it is correct in every way. It is as flexable as the old rubber tubing, but in this of course there is no rubber used to deteriorate.

This photograph shows clearly how it can be doubledup without being kinked or injured in any way. They can be made somewhat cheaper than the present ones manufactured.

We thought before organizing a company to put these on the market, we would see if the Eastman Company would be interested in it. I'll thank you to talk the matter over with them.

We believe that nearly all the faults people have found with the Kodak can be attributed to these cable releases which get kinked. This one we have reduces that difficulty to a minimum.

Let us hear from you as soon as convenient, and with very best wishes for you and yours,

Your friend,

Plaintiff's Exhibit 4

13

EASTMAN KODAK COMPANY

ROCHESTER, N.Y.

June 24, 1918.

Mr. Joseph Knaffl,

c/o Knaffl & Bro.,

Knoxville, Tenn.

My dear Joe:

Yours of the 21st, enclosing photograph of a camera cable release, is just at hand.

Needless to say, we are always interested in anything of this kind and I am going to suggest that you send the device on to me, as we would very much like to try it out. No doubt your patents are in such shape that you are fully protected, so there would be no trouble along this line. If you will do this, we will be glad to investigate the matter further.

Very truly yours,

Hiller Fell

FG

Plaintiff's Exhibit 5

P6
The

8

7/2/18.

Mr,H.M.Nell,

% Eastman Kodak Co.,

Rochester, N.Y.

Dear Harry-

We sent the little release in yesterday's mail. You will notice that this has been used considerably from the wear on the outside of the braid. This has been used for several months on a No.1 Autographic Special Kodak.

This little devise has been handled pretty rough. When this work is all done by machinery they will make a much neater appearance and do even better work than this one has done. We believe that it has solved the problem of the release troubles.

We have shown this to quite a number of kodakers and they seem to like it very much indeed.

Attach this to one of the kodaks mentioned above and try it out, You will notice that it makes no difference how much you bend it or kink it. Then let us know what the Eastman Company thinks about it.

Thanking you for the kindness shown us,and with very best wishes,we are,

Yours very truly,

Plaintiff's Exhibit 6

EASTMAN KODAK COMPANY

ROCHESTER, N.Y. July 10, 1918.

Mr. Joseph Knaffl,
C/o Knaffl & Bro.,
Knoxville, Tenn.

Dear Sir:-

Mr. H. M. Fell, to whom you sent your letters of June 21st and July 2nd, has referred them to the writer. We find that this release is identical in practically every respect with the release which we have been marketing for some time. For a very considerable period we have been experimenting with such a release and are familiar with this type of construction.

Inasmuch as you mention having the matter of organizing a Company to market this device in your mind, it might interest you to know that we are perfecting our patents covering this construction. We are taking the liberty of sending you one of our releases together with the release which you so kindly sent us for examination.

We wish to thank you for your thoughtfulness in giving us an opportunity to consider your release and hope that, in the future, you will submit to us any photographic devices that you have in mind.

Yours very truly,

EASTMAN KODAK COMPANY,

By T. W. Langsdorf

General Manager Mfg. Depts.

HRA/MEM

Plaintiff's Exhibit 7

10

F. 1675.

595:53

CYRUS KEHR
COUNSELLOR AT LAW
801 Bowers Building
KNOXVILLE, TENNESSEE

PATENT, TRADE-MARK
COPYRIGHT AND CORPORATION LAW

WASHINGTON OFFICE
908 9TH STREET

Re file 3796

Knoxville, Tenn. Sept. 26, 1919

Eastman Kodak Company,
Rochester, N. Y.

Mr. Stinchfield
How about it?
F.W.L.

Gentlemen:

Allow me to bring to your attention U. S. patent, No. 1,314,867, granted to Charles B. Gray, of Knoxville, Tennessee, Sept. 2, 1919, for an improvement in Power Transmitting Mechanism.

We note that you are marketing cable releases covered by this patent, and we ask whether you desire to make an adjustment without suit.

Let me say further, that my client's device is the first practical device of this kind, and he and those associated with him are planning arrangements for manufacture, and they will naturally want the field to themselves.

Very truly yours,

Cyrus Kehr

EASTMAN KODAK CO.
SEP 30 1919
PATENT DEPT.

Plaintiff's Exhibit 10

P 11

COPY

Oct. 6, 1919

Mr. Cyrus Kehr,
807 Empire Bldg.,
Knoxville, Tenn.

Dear Sir:-

We find upon full investigation that none of the cable releases manufactured by us infringes U.S. patent No.1,314,867, Gray.

More than two years before the Gray application was filed we made and sold in this country large quantities of cable releases having the same general combination of parts as our present ones, including a sleeve or barrel, screwed into the outer head and engaged by a close coiled wire casing or tube. Not only is the use of an open coiled spring tube in place of the closed one non-inventive in view of the Edwards patents cited against Gray and in view of cable releases imported into this country before Feb. 7, 1913 by the foreign owners of the Edwards patents, but we ourselves substituted and tested for our own satisfaction the open coil spring in our standard cable releases before Mr. Gray entered the field.

Obviously anybody in this country can use an inner coiled thrust member in view of the cited German patnt No. 147,572, Wermann. We do not attach such thrust member to the other parts by threads, as Gray does, but by the same device that we have employed for years (and before Feb.7, 1916) in connection with our former thrust members.

With regard to the last paragraph of your letter, we know from our own experience that literally hundreds of thousands of practical cable releases have been sold for many years and used with satisfaction all over the world.

Yours truly.

RLS-MD Plaintiff's Exhibit 11 Patent Attorney.

P 2 P 12

EASTMAN KODAK COMPANY

ROCHESTER, N.Y. December 3, 1919.

Mr. Joseph Knaffl,
Knaffle & Brother,
Knoxville, Tann.

Dear Sir:

Mr. Fell handed us your letter of November 18th and since that time we have been reviewing the matter. We find that our Patent Department, under date of October 6th, wrote to Mr. Cyrus Kehr of Knoxville, in response to his letter of September 26th calling our attention to the Gray patent and implying that suit would be brought unless adjustment was made. We have heard nothing further from Mr. Kehr in this matter, and assumed that the statements of our attorney had disposed of his contention that we were infringing the Gray patent. Possibly this letter of ours to Mr. Kehr has not been brought to your attention and, therefore, we enclose a copy for your information.

To review the matter again, the facts are these: The cable release which you sent us with your letter to Mr. Fell of June 21, 1918, was like a cable release which we had marketed many years previously, except in two features: First, the coils of the flexible casing were open, or separated, so as to give a spring effect; second, the inner thrust member, instead of being composed of twisted strands, was itself a miniature coiled tube. At the time we received your sample we were familiar with both of these ideas, and, therefore, did not regard them as new. As to the first feature, we have written evidence of our knowledge of this at least two years before the receipt of your sample. As to the inner coil thrust

member, our knowledge of this feature is proved by our patent No.1,297,327 to Dakin, March 18, 1919. This patent shows this feature, and the filing date of October 15, 1917, is, as you will note, eight months before your first letter to Mr. Fell. We abandoned, however, claims to this feature because it had been clearly shown in a prior German patent, No.147,573 to Wermann.

If you will refer to the writer's letter to you of July 10, 1918, you will note that we referred to the similarity of the release we were then marketing and the Gray release, and sent you a sample, and, furthermore, we at the same time told you that we had already applied for patent.

We trust that a careful review of the facts above cited will convince you that there is neither any ethical nor legal responsibility on our part for violation of the claims of the Gray patent.

If there is anything in our statement that is not clear to you, we would be very glad to amplify it.

Yours very truly,

EASTMAN KODAK COMPANY,

F. W. Lovejoy

F. W. Lovejoy
Vice President.

Plaintiff's Exhibit 12 (continued)

F.1675

EASTMAN KODAK COMPANY

ROCHESTER, N.Y.

October 31, 1925.

Mr. C. B. Gray,
Box 596,
Philadelphia, Pa.

Dear Sir:

Since your call upon us a few days ago, we have given careful consideration to your U. S. patent No.1,314,867, September 2nd, 1919. Because of the circumstances outlined in detail to you by Mr. Stewart of our Patent Department, we find that we must adhere to the opinion that our cable releases do not infringe any valid claims of your patent.

On June 21st, 1918, one of your cable releases embodying the construction mentioned in the above patent was sent to us by Mr. Knaffl. This cable release we found to be similar to cable releases which we had made and marketed for several years except for two features, both of which were not original with you. First, the flexible casing included an open coil spring, and second, the plunger of the cable release consisted of a closed coil spring. We knew of the open coil spring before your cable release was submitted to us as is shown in the following United States patents:

828,815	Edwards,	August 14, 1906
929,573	"	July 27, 1909

The use of a closed coil spring thrust member is shown in our U. S. patent No. 1,297,327, Dakin, et al., March 18th, 1919. We filed a patent application for this device October 15th, 1917, eight months before your cable release was submitted to us.

Plaintiff's Exhibit 13

Claims to this closed coil spring thrust member were abandoned because of its being shown in an old German patent No. 147,572, Werman, May 28th, 1902.

We feel that the circumstances outlined above furnish convincing evidence that the cable release which you submitted to us differed from those which we had had on the market for years only in these two ways, and that cable releases embodying the construction constituting these two differences are clearly shown in the prior art.

We hope that, after you have had an opportunity to review these matters with your attorney, you will agree with us in believing that our contentions are correct. Meanwhile we wish to thank you for the courteous way in which you have approached us on this subject.

Yours very truly,

AKC/JC

EASTMAN KODAK COMPANY

Manufacturing Department

By A K Chapman

Plaintiff's Exhibit 13 (continued)

CW 131

SPECIFICATION AND LIST OF PARTS FOR FACTORY ORDER NO.

EASTMAN KODAK CO.

9435

APR 15 1929

FOR 50,000 #2 cable rel.

1. rel 4/15/29 Dean

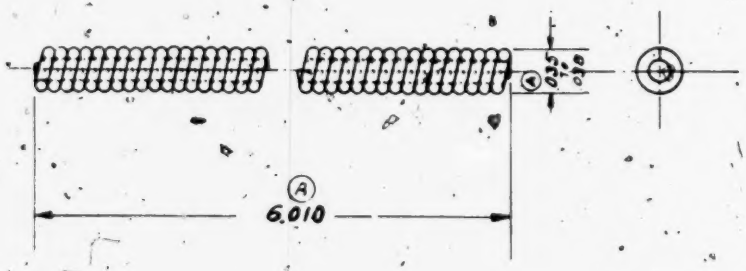
PART NO.	NAME OF PART AND MATERIAL	USED ON MODEL	QUANTITY REQUIRED	SURPLUS APPLIED	QUANTITY ORDERED	REMARKS
9500	outside casing	1	52500		52500	✓
10185	plunger cap	1	52500		STOCK	✓
10191	operating sprg. sleeve cap	1	52500		STOCK	✓
14511	cable	1	52500		52500	✓
14517	operating plunger	1	52500		STOCK	✓
14519	cable end	1	52500		STOCK	✓
14523	shutter plug	1	52500		STOCK	✓
23788	operating sprg. sleeve	1	52500		STOCK	✓
23789	shutter plug sleeve	1	52500		STOCK	✓
23791	spring casing	1	52500		52500	✓
	{ASSEM PARTS}					
18393	cable with plunger	1				
15132	cable rel. complete	1				

Plaintiff's Exhibit 36

USED ON
№ 2 - 7" CABLE RELEASE.

223

Ⓑ NOTE: CLOSE WOUND - LEFT HAND.



CABLE.

CHANGE NO.	CAMERA WORKS - E. K. CO. CHANGES	DATE	BY
91-B	Ⓐ was 6.180	9-13-17	
1319	Mat. was .030 (.0287) Piano Wire	3-3-21	
958-A	TOLERANCE ADDED TO "A"	12-22-22	JC
4307	MATL WAS .0098 PIANO WIRE	8-14-28	PT
5321-B	NOTE Ⓑ ADDED	12-22-30	

SCALE	DES BY APV'D BY
DRAWN BY	O. M. H. DATE 4-14-17
CHECKED BY	J.E.S. APV'D BY
MATERIAL	.0098 SPECIAL MUSIC WIRE
PART NO DRAWING	14511

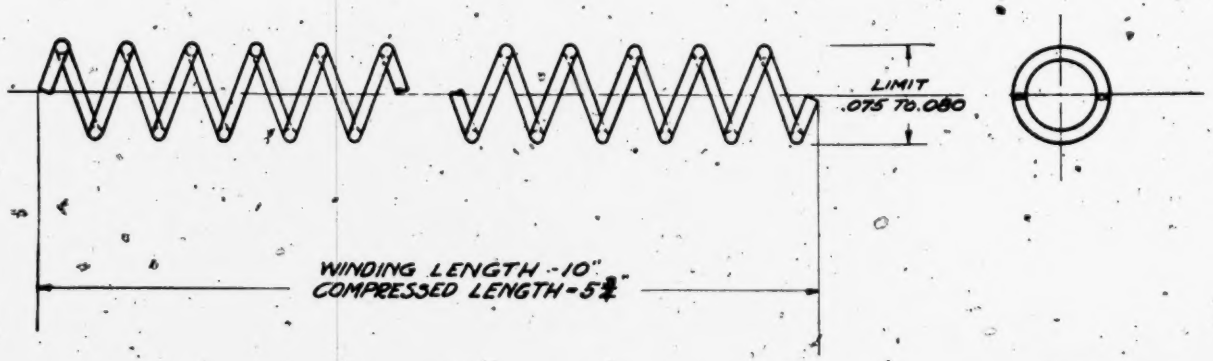
Plaintiff's Exhibit 37

17

23791

Ex. 27
KMK
12/4/31

USED ON
#2-7" CABLE RELEASE



NOTE:
APPROX. 20 TURNS PER. IN.

SPRING CASING

CHANGE NO.	CAMERA WORKS - E. K. CO. CHANGES	DATE	BY

DRAWN BY Siegfried DATE 12-26-24
TRACED BY Siegfried DATE 12-26-24
CHECKED BY Veitch APV'D BY
MATERIAL #28 (.014) BRASS WIRE
2432

No. 23791

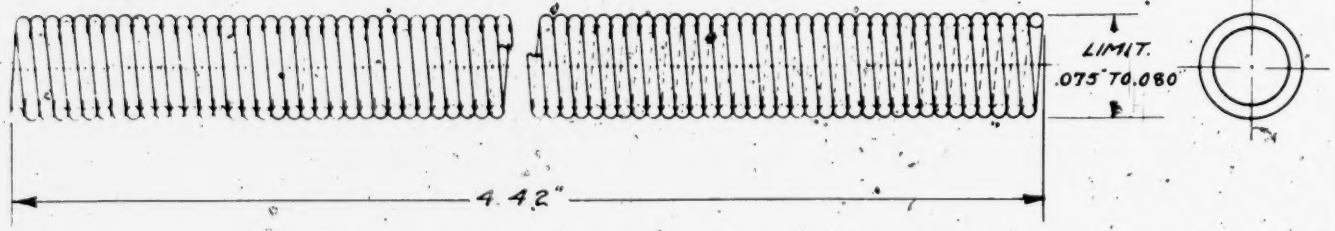
Plaintiff's Exhibit 38

824
18

225

P 39.

USED ON
.7" CABLE RELEASE
#18"2 BALL BEARING SHUTTER.



SPRING CASING.

CAMERA WORKS-E. K. CO.			
CHANGES		DATE	BY
REDRAWN	H. S.	10-10-44.	

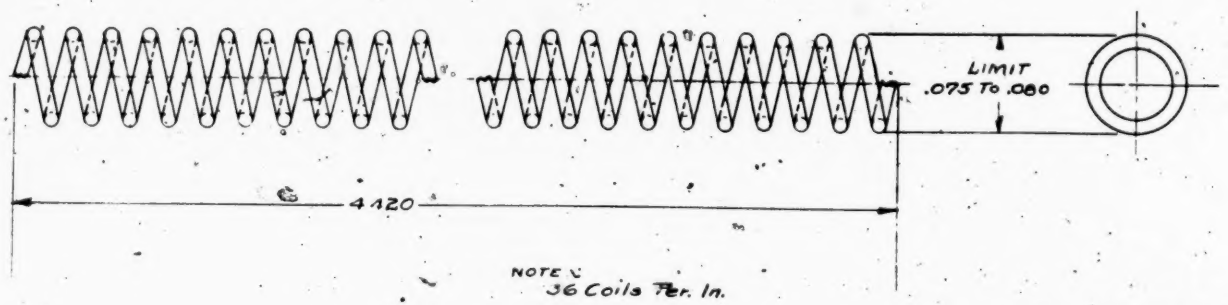
SCALE	10 TIMES SIZE.
DRAWN BY	H. S. DATE 11-26-13.
CHECKED BY	APV'D BY
MATERIAL	BRASS WIRE #30 .011" DIA.
PART NO DRAWING	9507-

Plaintiff's Exhibit 39

19

Plaintiff's Exhibit 40

USED ON
2.7" CABLE RELEASE



NOTE:
36 Coils Per. In.

SPRING CASING

CHANGE NO.	CAMERA WORKS-E. K. CO.		
	CHANGES	DATE	BY
	Mat. Was #30 (.011) BR. W	10-22-20	

SCALE	DESIGN APV'D BY
DRAWN BY S. E.	DATE 5-8-18
CHECKED BY J. E. S.	APV'D BY
MATERIAL #20 (.040) Brass Wire	
PART NO	
DRAWING	15131

20

220

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EASTMAN KODAK COMPANY

CAMERA WORKS

ROCHESTER, N. Y.

Page NO. 1

List of Parts to Make One Complete NO.2-7" CABLE RELEASE 1 B.B. FOR 1A JR. 1A AUTO

DATE 5/21/18 3 F.P.K. - 2 B.B. FOR 3A F.P.K. 20 & 3A FOLD- BROWNIE

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
~~9507~~	SPRING CASING			1
	BRASS WIRE NO.30	.011	PURCHASED	
9509	OUTSIDE CASING			1
	LINEN SLEEVING		PURCHASED	
10185	PLUNGER CAP			1
	BRASS ROD	9/32"		
10491	OPERATING SPRING SLEEVE CAP			1
	BRASS ROD	7/16"		
12891	OPERATING SPRING SLEEVE			1
	BRASS TUBE	.125 OUTSIDE DIA.	.085 INSIDE DIA	
14511	CABLE			1
	PIANO WIRE NO.00	0087"		
14515	SHUTTER PLUG SLEEVE			1
	BRASS ROD	1/8"		
14517	OPERATING PLUNGER			1
	BRASS ROD	3/32"		
14519	CABLE END			1
	BRASS ROD	066		
14521	OPERATING SPRING			1
	MUSIC WIRE	NO.0 .0093 B & S. GAUGE		
14523	SHUTTER PLUG			1
	BRASS ROD	7/32"		

Offd Ex 43

APR 12 1920

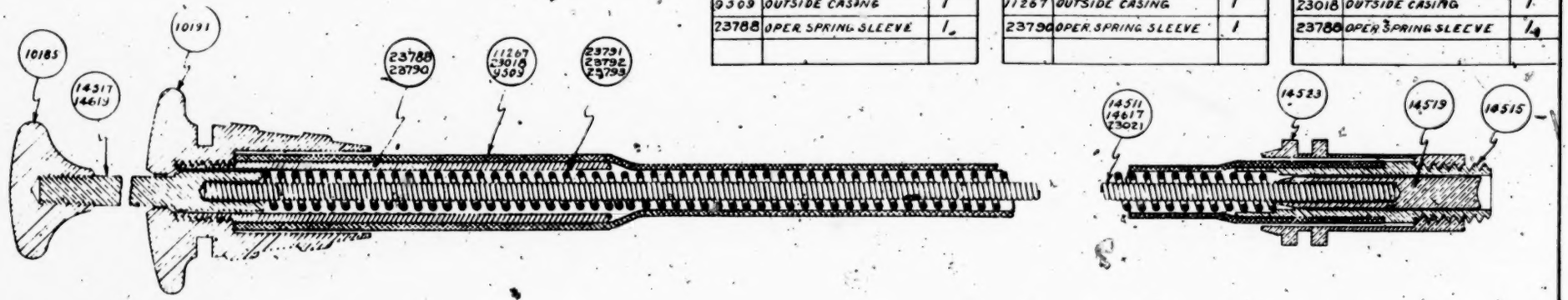
Plaintiff's Exhibit 43

USED ON No 20-7 CABLE RELEASE		
PART NO.	NAME	NO IN GROUP
15132	CABLE RELEASE	1
14674	SELF TIMER CABLE RELEASE BRACKET	1
15129	SET SCREW	1

USED ON No 2-7 CABLE RELEASE		
PART NO	NAME	NO IN GROUP
14511	CABLE	1
10185	OPER. PLUNGER CAP	1
14517	OPERATING PLUNGER	1
10191	OPER SPR & SLEEVE CAP	1
23791	SPRING CASING	1
23789	SHUTTER PLUG SLEEVE	1
14519	CABLE END	1
14523	SHUTTER PLUG	1
9309	OUTSIDE CASING	1
23788	OPER SPRING SLEEVE	1

USED ON 13-3 CABLE RELEASE		
PART NO.	NAME	NO IN GROUP
14617	CABLE	1
10185	OPER. PLUNGER CAP	1
14619	OPERATING PLUNGER	1
10191	OPER. SPRG. SLEEVE CAP	1
23792	SPRING CASING	1
23789	SHUTTER PLUG SLEEVE	1
14519	CABLE END	1
14523	SHUTTER PLUG	1
11267	OUTSIDE CASING	1
23790	OPER SPRING SLEEVE	1

USED ON 16-8 CABLE RELEASE		
PART NO.	NAME	NO IN GROUP
23021	CABLE	1
10185	OPER. PLUNGER CAP	1
14517	OPERATING PLUNGER	1
10191	OPER SPRG. SLEEVE CAP	1
23793	SPRING CASING	1
23789	SHUTTER PLUG SLEEVE	1
14519	CABLE END	1
14523	SHUTTER PLUG	1
23018	OUTSIDE CASING	1
23788	OPER SPRING SLEEVE	1



No 20-7 CABLE RELEASE Construction No 15297
No 2-7 CABLE RELEASE Construction No 15132
No 13-3 CABLE RELEASE Construction No 15154
No 16-8 CABLE RELEASE Construction No 23020

CHANGE NO.	CAMERA WORKS-E.K.CO. CHANGES	DATE	BY
5321	REVISED PART LIST FOR 2-7 CABLE RELEASE & PART NOS.	5-2234	L.T.J.

CHANGE NO.	CAMERA WORKS-E. K.CO. CHANGES	DATE	BY
477	No 20-7" CABLE RELEASE Construction 6189 added	9-28-18	
477	No 20-7" WAS 15189	5-13-20	
2097	No 16-8 - 23020 WAS 23129 - 15160	11-7-23	J.C.
2432	REVISED TO AGREE WITH CHANGE IN OPERATING SPRING	12-28-23	J.C.
4419	PART LIST FOR 2-7 & 20-7 CABLE RELEASES ADDED.	10-16-28	

SCALE — DESN. APV'D BY
DRAWN BY O.M.H. DATE 5-14-18
CHECKED BY J.E.S. APV'D BY
MATERIAL
PART NO
DRAWING 15132

Plaintiff's Exhibit 44

D-1

Defendant's exhibit No. 1

DEPARTMENT OF COMMERCE
UNITED STATES PATENT OFFICE

To all persons to whom these presents shall come, Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of the File Wrapper, Contents and Drawings, in the matter of the

Letters Patent of

Charles B. Gray,

Number 1,314,867, Granted September 2, 1919,

for

Improvement in Power-Transmitting Mechanism.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this eighth day of October, in the year of our Lord one thousand nine hundred and thirty-one and of the Independence of the United States of America, the one hundred and fifty-sixth.

ATTEST:

Chief of Division.

Thomas E. Robertson
Commissioner of Patents.

24-a

232

NUMBER (Series of 1915) 4 **1918** (EX'R'S BOOK) 170 - 25

DIV. 12 **PATENT No.** 1314867

Charles B. Gray,

of Knoxville,
County of
State of Tennessee,
Invention Power Transmitting Mechanism

PARTS OF APPLICATION FILED	ORIGINAL	RENEWED
Petition	February 7, 1918	, 191
Affidavit	" " , 1918	, 191
Specification	" " , 1918	, 191
Drawing 2 Shts	" " , 1918	, 191
Photo Copy	, 191	, 191
First Fee Cash $15	Feb 7, 1918	, 191
" " Cert.	, 191	, 191
Appl. filed complete	Feb 7, 1918	, 191
Examined and Passed for Issue	Feb 4, 1919	, 191
Ex. Div.	12	Ex. Div.
Issue Fee	Feb 6, 1919	, 191
Allowed	Aug 5, 1919	, 191
Final Fee Cash	, 191	SEP 2 1919 , 191
Patented		, 191

Attorney Cyrus Kehr, Empire Bldg Knoxville, Tenn.

Associate Attorney

Division of Pat. No.

Final Claims Allowed 6 Print Claims 10 in O. G. (Cl. 64)

Allowed Power Transmitting Mechanism

24-b

U. S. PATENT OFFICE

To the Commissioner of Patents:

5709

Your petitioner, Charles Baxter Gray, a citizen of the United States and resident of Knoxville, in the County of Knox, and State of Tennessee, and whose post-office address is 1849 Armstrong Ave., Knoxville, Knox County, Tennessee, prays that Letters-Patent may be granted to him for the improvement in

Power Transmitting Mechanism

set forth in the annexed specification.

And he hereby appoints CYRUS KEHR, of Knoxville, State of Tennessee, (Registry No. 2286), his attorney with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent Office connected therewith.

Signed at Knoxville, County of Knox, State of Tennessee, this 1st day of February 1918

Charles B. Gray

Witnesses

[redacted]

Specification

To all Whom it May Concern:

Be it known that I, Charles Baxter Gray, a citizen of the United States, residing at Knoxville, in the County of Knox and State of Tennessee, have invented a new and useful improvement in Power-Transmitting Mechanism, of which the following is a specification, reference being had to the accompanying drawing.

215885

24-c

My improvement relates particularly to [illegible] for transmitting power through endwise reciprocating [illegible] the mechanism. The mechanism is applicable for use as an operating means for the shutters of cameras, and as an operating or releasing means for various kinds of apparatus.

The object of the invention is to provide a transmitting mechanism inflexible form permitting [illegible] without injury to the mechanism, and in a manner to insure the attainment of precise movement.

In the accompanying drawings,

Figs. 1a and 1b together present a longitudinal section of a mechanism embodying my improvement, portions being in elevation;

Fig. 2 is a section on the line, 2---2, of Fig. 1, looking toward the left;

Fig. 3 is a section on the line, 3---3, of Fig. 1, looking toward the left;

Fig. 4 is a section on the line, 4---4, of Fig. 1, looking toward the left;

Fig. 5 is a section on the line, 5---5, of Fig. 1, looking toward the right.

Referring to said drawings, A is a metallic tube or barrel having its left hand end screw-threaded into the contracted portion, B1, of the outer head, B, whereby said barrel and said head are firmly but detachably joined to each other. The opposite end of said barrel is contracted to form a neck, A1. At the junction of said neck with the body of said barrel is a shoulder, A2. A stem, F, extends slidably through the head, B. Within said head, the stem has an annular rib, F1, which limits the movement of said stem toward the left [illegible]

the neck, A1, of the barrel, A. Between said annular rib and the shoulder, A2, the stem, F, is surrounded by an expanding coiled spring, G. Said spring abuts against the shoulder, A2, and against the rib, F1, and tends to move the stem, F, toward the left or away from the neck, A1, so that, when said stem is free from pressure on its outer end in the direction of the barrel, the stem is held outward with the rib, F1, bearing against the inner face of the wall of the head, D.

The neck, A1, is loosely surrounded by the left hand end of a coiled spring wire tube, C. The right hand end of said spring extends into a head, D. Said head has a tubular neck, D1, in which is an annular shoulder, D2, against which said spring abuts. Said spring rests loosely within said head. The head, D, and the Head, D, are joined by a fiber fabric tube, D. At its left hand end, said fabric tube surrounds the barrel, A, and the head, D, has a tubular extension, D3, surrounding said fabric tube. The fabric is secured to the barrel, A, by means of a suitable adhesive. At the right hand end, the fabric tube surrounds the neck, D1, on the head, D, and a band, D1, surrounds the fabric tube and binds the latter to said neck.

The coiled spring wire tube, C, is so wound as to leave spaces between the coils, and said tube is made long enough to cause it to be under compression endwise when the fiber fabric tube is under tension. Thus the fiber fabric tube is normally held under tension and the coiled spring wire tube, C, is normally exerting endwise pressure. And the fiber fabric tube limits the endwise expansion of said wire tube. The length of the fiber fabric tube and the coiled wire tube, C, and the spacing between the coils of the tube are so proportioned as to still leave spaces between the coils of the tube, C, when the latter is held

under restraint by the fiber fabric tube against full endwise expansion. The spaces thus left between the coils of the tube, C, are sufficient to allow approach of adjacent coils toward each other at the inner side of the curve while there is limited or substantially no expansion of the coils at the outer side of the curve when the tube is bent.

On the inner or right hand end of the stem, F, is a neck, F2, at the base of which is an annular shoulder, F3. Said neck is surrounded by one end of a coiled wire tube, J. The opposite or right hand end of said tube extends around a neck, I1, on a slide member, I, which is slidable endwise in the head, H. The engagement between the tube, J, and the necks, F2 and I1, may be frictional, but said necks are preferably screw-threaded to conform approximately to the coils of the tube, J, in order that said tube may be threaded to said necks. The tube, J, is preferably so formed as to cause its coils to normally press firmly against each other, in order that there may be no lost motion when the stem, F, is pressed inward, in the direction of the head, H, the stem, F, pushing the tube, J, and the tube, J, pushing the slide member.

The slide member, I, may be regarded as the final member in the transmission. In the particular form shown in the drawings the outer end of said member has a concave face, I2, adapted to bear against a pivoted member, K, which is to be moved by the outward movement of the slide member, the head, H, being screwed into a relatively stationary wall, L, and thus held in relation to the member, K.

The coils of the tube, C, are wound in one direction while the coils of the tube, J, are preferably wound in the opposite direction.

As above described, the tube, J, is held to the neck,

2,168,805-4

24-f

F2, of the stem, F, and the slide member, I, is held to the tube, J, by means of the neck, I1. After unscrewing the head, B, from the barrel, A, the stem, F, together with the spring tube, J, and the slide member, I, may be drawn out endwise, toward the left, through the barrel, A, the diameter of the tube, J, and the slide member being of less diameter than the interior diameter of the tube, C.

The fabric tube, D, may be detached by removing the band, D1, and softening or dissolving the adhesive by which said fabric is secured to the barrel, A.

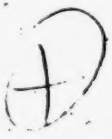
This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, C, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely-wound, adapts itself to the bending without kinking.

Practice has shown that a mechanism of this construction may be bent an indefinite number of times without kinking or otherwise disabling the coiled wire tubes.

The reach of the slide member, I, may be adjusted by moving the tube, J, on both or either of the necks, F2 and I1. In this manner a very precise adjustment may be made.

The size of the mechanism is to be varied to conform to

the amount of power to be transmitted and to the size of the apparatus with which the transmission mechanism is to be associated. For some purposes the mechanism may be as large or larger than shown by the drawings. For example, in power-driven vehicles the mechanism may be made large and used for power transmission to some point distant from the driver, the stem, F, being used as a pedal.



I claim as my invention,

1. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

2. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

3. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means tending normally holding said stem at its outer limit, a slide member.

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the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

4. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

5. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

6. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definite-

ly holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

7. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

8. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the

transmission of endwise motion from said stem to said slide member, substantially as described.

9. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and (adjustably) joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

10. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and adjustably ~~joined to~~ surrounding said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

11. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem ex-

tending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

12. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

13. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion, said intervening means and said slide member and said stem being together removable, substantially as described.

14. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem toward and to said slide member, said intervening means and said slide member and said stem being together removable, substantially as described.

15. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem toward and to said slide member, said intervening means and said slide member and said stem being together removable, substantially as described.

16. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance

from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, said intervening means and said slide member and said stem being together removable, substantially as described.

17. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

18. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

19. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and a coiled wire tube intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

20. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

21. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means surrounding said spring wire tube and joining said heads and definitely holding them at a fixed distance from each other while said

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24-p.

spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

22. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means surrounding said spring wire tube and joining said heads, and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

23. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

24. In a mechanism of the nature described, the com-

bination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

25. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem toward and said intervening tube and said slide member and said stem are together removable, substantially as described.

26. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of

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24-r

said heads, and a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion from said stem toward and to said slide member, said intervening tube and said slide member and said stem ~~being~~ are together removable, substantially as described.

215885

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In testimony whereof I have signed my name, ~~in presence of two witnesses~~, this 1st day of February, in the year one Thousand Nine Hundred and Eighteen.

Charles B. Gray
INVENTOR

WITNESS

WITNESS

Oath

State of Tennessee)
) ss.
County of Knox)

Charles Baxter Gray

the above-named petitioner, being sworn, deposes and says that he is a citizen of the United States and resident of

Knoxville, Knox County, Tennessee;

that he verily believes himself to be the original, first and sole inventor of the improvement in

Power Transmitting Mechanism

described and claimed in the annexed specification; that he does not know and does not believe that the same was ever known or used before his invention or discovery thereof, or patented or described in any printed publication in any country before his invention or discovery thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two years prior to this application; and that no application for patent on said improvement has been filed by him or his representatives or assigns in any country foreign to the United States; that the first portion of his name is as above written.

Charles B. Gray
INVENTOR

Sworn to and subscribed before me this 1st day of February 1918

Roy A. Johnston
Notary Public.

(L. S.)

215885
18

24-t

The Commissioner of Patents, Washington, D. C., and not any official by name.

Application should give the serial number, date of filing, title of invention, and name of the applicant.

DEPARTMENT OF THE INTERIOR

UNITED STATES PATENT OFFICE

WASHINGTON February 25, 1918.

PATENT OFFICE. FEB 25 1918 MAILED.

Cyrus Kehr,

Empire Building,

Knoxville, Tennessee.

Please find below a communication from the EXAMINER in charge of the application of

C. B. Gray, for Power Transmitting Mechanism, filed February 7, 1918, Serial Number 215,885.

James T. Newton

Commissioner of Patents.

S-221

This case has been examined.

Claims 1 to 9, 11 and 12, are rejected as not patentable over -

British to Watson, 13,157, June 28, 1905, (64-30-B.M.), (see Figure 2). To attach a slide element to the end of the transmission member instead of attaching the transmission member directly to the device to be operated upon is not patentable in view of the disclosure in -

939,573, Edwards, July 27, 1909, (64-30-B.M.)(see Fig. 2).

Claim 10 is rejected as not patentable over the citations above. The idea of making the transmission of adjustable length is not patentable over threaded connections 10 and 11 shown in -

1,072,439, Duryea, Sept. 9, 1913, (64-30-B.M.)

Claims 13, 14, 15, 16, 35, and 36 are rejected the same as claim 1. Obviously the transmission member in the references is not placed in the mechanism beyond the possibility of removal. If applicant's device is of such construction as to offer particular facilities for removal such feature should be defined in terms of structure and not by the functional statement that it has a certain capacity or manner of operation.

Claims 17 to 32 inclusive are rejected on the British pa-

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tent to Edwards cited. To construct the transmission element of a coiled wire tube is not patentable in view of -

German to Wermann, 147,572, June 23, 1904, (84-30-B.M.) (1 sheet).

Claims 33 and 34 appear allowable. Attention is directed to the excessive number of claims in this application, many of them of the same scope and substantially duplicates. Such practice is directly in contravention of numerous decisions both by this office and by the courts and serves no purpose other than to impose a needless burden upon this office and thereby delay the proper prosecution of the case. See --

Ex parte Chapman, 130 O. G. 2446.
In re Carpenter, 113, O.G. 503.
Ex parte, Kadow, 154 O. G. 1418.
Ex parte Johnson, 54 O. G. 505.

E.C.W.A.

E. A. Sauer
Exr. Div. 13.

215885

24-v

MAY 28 1918 5727
U. S. PATENT OFFICE

Room No. 322.

AMENDMENT.

Knoxville, Tenn: May 25, 1918

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In the matter of the application of
Charles B. Gray,
Ser. No. 215,885,
Filed February 7, 1918,
"Power Transmitting Mechanism".

This is in response to the Examiner's letter, dated February 25, 1918.

Page 1, line 7, from the bottom, before "head" insert "outer".

Page 2, line 10, after "hand" insert "or inner".

Same page, line 11, after "into" cancel "a", and insert "an inner".

Same line after "Said" insert "inner".

Claims 1 to 9, 11 and 12, line 2, before "a coiled", insert "a barrel on the outer head,".

Claims ~~1~~ to ~~9~~, ~~11~~ and ~~12~~, line 3, after "heads", insert "and engaging said barrel".

Claim 13, line 9, after "motion" cancel the comma and insert: from the stem toward and to the slide member, the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing

of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,

✓ Claim 13, line 10, cancel "being" and insert "are".

✓ Claim 14, line 10, after "stem" insert "toward and".

✓ Claim 14, line 11, before "said intervening", insert "the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,".

✓ Claim 14, line 12, cancel "being" and insert "are".

✓ Claim 15, line 11, after "stem" insert "toward and".

✓ Claim 15, line 12, before "said intervening" insert "the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,".

✓ Claim 15, last line, cancel "being" and insert "are".

✓ Claim 16, line 10, after "stem" insert "toward and".

✓ Claim 16, line 10, before "said intervening" insert "the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,".

✓ Claim 16, line 11, cancel "being" and insert "are".

Claim 24, line 10, after "stem" insert "toward and".

Same claim, line 11, before "said intervening" insert "the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,".

Claim 25, line 11, cancel "being" and insert "are".

Claim 26, line 10, after "stem" insert "toward and".

Claim 26, line 10, before "said intervening" insert "the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head,".

Claim 30, line 11, cancel "being" and insert "are".

Claims 17, 18, 19, 20, 21 and 22, line 2, before "a coiled" insert "a barrel on the outer head,".

Claims 17 to 22, inclusive, line 3, after "said heads" insert " and engaging said barrel".

Add the following claims:

27. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said

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21-Y

heads and having limited outward movement; a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, one of said joinings being adjustable, substantially as described.

26. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, one of said joinings being by threading, substantially as described.

The references do not show the barrel and the coiled wire tube engaging the barrel, as now made elements in claims 1 to 9, 11 and 12.

Claims 13, 14, 15, 16, 25 and 26 have been amended to specify structure whereby the stem and the slide member and the intervening transmission member are made removable.

Claims 17 to 22, inclusive, have been amended to include the barrel and to specify that the outer spring tube engages, features not present in the references.

The Examiner's letter indicates that applicant has an excessive number of claims, "many of them of the same scope and substantially duplicates"; but it is not stated which claims are regarded as of the same scope or substantially duplicates.

215885-M Very respectfully submitted,

Ogrus Keller Atty.

24-z

H/KL.

DEPARTMENT OF THE INTERIOR

UNITED STATES PATENT OFFICE

WASHINGTON June 15,1918.

Cyrus Kehr.
Empire Bldg.
Knoxville, Tenn.

PATENT OFFICE
JUN 15 1918
MAILED

Please find below a communication from the EXAMINER in charge of the application of
Charles B/Gray. Serial No/215,885. Power Transmitting Mechanism.
Filed Feb. 7,1918.

James T. Newton
Commissioner of Patents.

Response to Amendment dated May 27,1918.

Claims 1 and 4 are allowed.

Claims 2,3 and 5 to 9 are rejected as including no patentable elements distinguishing from claims 1 and 4 allowed. See ex parte Johnson, and ex parte Chapman, cited in last office action. Morever, claims 5,6,7 and 8 are duplicates respectively of claims 1,2,3 and 4. Claim 9 is a duplicate of claim 2 except for the word"adjustably", in line 8 and this feature is not patentable in view of Duryea of record.

Claim 10 stands rejected as noted in last office letter .

Claims 11 and 12 are rejected as not patentably distinct from claims 1 and 4 respectively, except for the word"adjustably" which is not a patentable feature as noted above.

See ex parte Griffith 85 O.G.936
ex parte Whitelaw 219 O.G/1237

Claim 13 is allowed.

Claim 14,15,16,25 and 26 are rejected as not patentably distinct from claim 13 allowed. Merely adding elements old in the art to claim 13, defines no patentable novelty.

215885

24-aa

215,865.--2

Claims 17 to 22 are rejected as not patentably distinct from claims 1 and 4, allowed. The use of the "coiled wire tube" for the " intervening means" defined in claim 1 is not patentable in view of the German patent of record. In other words- applicant merely adds a limitation found in the prior art -- to allowed claims which is not patentable.

Claims 23 and 24 stand allowed.

Claim 27 is rejected as not patentably distinct from claim 23 allowed.

Claim 28 is rejected as not patentably distinct from claim 24 allowed .

Examiner, Division 12.

215885
26

24-bb

Room 32. JUN 18 1918 U.S. PATENT OFFICE

AMENDMENT.

Knoxville, Tenn. June 17, 1918

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In the matter of the application of
Charles B. Gray,
Ser. No. 215,885,
Filed Feb. 7, 1918,
"Power Transmitting Mechanism".

The Examiner's letter of the 15th inst. has been received.

Cancel claims 2, 3, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25 and 26.

Claim 10, line 9, cancel "joined to" and insert "surrounding".

Renumber the remaining claims consecutively.

Attention is directed to the fact that claims 27 and 28 are generic relative to claims 23 and 24, and it is therefore urged that claims 27 and 28 should be allowed.

Very respectfully submitted,

Attorney.

1. 4. 13. 23. 24
2. 4. 3. 6

X. 3. 3 – X 10. 11. 12. 14 – X. 24. 26. 27. 28
3. 7. 8

215885
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Address only "The Commissioner of Patents, Washington, D. C." and not any official by name.

All communications respecting this application should give the serial number, date of filing, title of invention, and name of the applicant.

DEPARTMENT OF THE INTERIOR

H:W

UNITED STATES PATENT OFFICE

WASHINGTON July 18, 1918.

PATENT OFFICE JUL 18 1918 MAILED

Cyrus Kehr,

Empire Building,

Knoxville, Tenn.

Please find below a communication from the EXAMINER in charge of the application of

Charles B. Gray, Serial No. 215,885, filed Feb. 7, 1918, for

Power Transmitting Mechanism.

James T. Newton

Commissioner of Patents.

6-3m

In response to amendment filed June 18, 1918.

Claims 1, 2, 4, 5 and 6 stand allowed.

Claim 3 is allowed.

Claims 7 and 8 stand rejected as noted in last office letter. The only distinction between claims 5 and 7 is in the definition in one case of the coiled wire tube as being adjustably joined to the stem and slide while in the other, the tube is defined as having one joining adjustable, thereby duplicating the adjustable feature at both ends of the tube is not a patentable distinction particularly in view of the disclosure in Duryea of record. The same argument applies to claim 8.

Examiner.

215885

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AMENDMENT.

Knoxville, Tenn. Jan. 29, 1919

Hon. Commissioner of Patents,
Washington, D. C.

Sir:

In the matter of the application of
Charles E. Gray,
Ser. No. 215,885,
Filed Feb. 7, 1918,
"Power Transmitting Mechanism."

This is in response to the Examiner's letter, dated July 18, 1918.

Cancel claims 7 and 8.

Very respectfully submitted,

Attorney.

215885

ADDRESS ONLY
THE COMMISSIONER OF PATENTS,
WASHINGTON, D. C.

2—181

Serial No. 215,885.

DEPARTMENT OF THE INTERIOR

UNITED STATES PATENT OFFICE

WASHINGTON Feb. 6, 1919.

Charles B. Bray,

Sir: Your APPLICATION for a patent for an IMPROVEMENT in Power Transmitting Mechanism, filed Feb. 7, 1918, has been examined and ALLOWED.

The final fee, TWENTY DOLLARS, must be paid not later than SIX MONTHS from the date of this present notice of allowance. If the final fee be not paid within that period, the patent on this application will be withheld, unless renewed with an additional fee of $15, under the provisions of Section 4897, Revised Statutes.

The office delivers patents upon the day of their date, and on which their term begins to run. The printing, photolithographing, and engrossing of the several patent parts, preparatory to final signing and sealing, will require about four weeks, and such work will not be undertaken until after payment of the necessary fee.

When you send the final fee you will also send, DISTINCTLY AND PLAINLY WRITTEN, the name of the INVENTOR, TITLE OF INVENTION, AND SERIAL NUMBER AS ABOVE GIVEN, DATE OF ALLOWANCE (which is the date of this circular), DATE OF FILING, and, if assigned, the NAMES OF THE ASSIGNEES.

If you desire to have the patent issue to ASSIGNEES, an assignment containing a REQUEST to that effect, together with the FEE for recording the same, must be filed in this office on or before the date of payment of final fee.

After issue of the patent uncertified copies of the drawings and specifications may be purchased at the price of FIVE CENTS EACH. The money should accompany the order. Postage stamps will not be received.

Final fees will NOT be received from other than the applicant, his assignee or attorney, or a party in interest as shown by the records of the Patent Office.

Respectfully,

James T. Newton
Commissioner of Patents.

Cyrus Kehr,
Empire Bldg.,
Knoxville, Tenn.

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IN REMITTING THE FINAL FEE GIVE THE SERIAL NUMBER AT THE HEAD OF THIS NOTICE.

UNCERTIFIED CHECKS WILL NOT BE ACCEPTED.

E. 1075.

$20 REC'T AUG 5 1919 PATENT OFFICE

2—327.

MEMORANDUM
OF
FEE PAID AT UNITED STATES PATENT OFFICE.

(Be careful to give correct Serial No.)

Serial No. 215,885, *191*

INVENTOR:

Charles B. Gray

PATENT TO BE ISSUED TO

Charles B. Gray

NAME OF INVENTION, AS ALLOWED:

Power Transmitting Mechanism

DATE OF PAYMENT:

August 4, 1919

FEE:

$20.00

DATE OF FILING:

February 7, 1918

DATE OF CIRCULAR OF ALLOWANCE:

February 6, 1919

The Commissioner of Patents will please apply the accompanying fee as indicated above.

Cyrus Kehr
Attorney.

SEND PATENT TO

Cyrus Kehr
607 Empire Bldg.,
Knoxville, Tenn.

215885
21

24-gg

564

C. B. GRAY.

POWER TRANSMITTING MECHANISM.

APPLICATION FILED FEB. 7, 1918.

1,314,867.

Patented Sept. 2, 1919.

2 SHEETS SHEET 1.

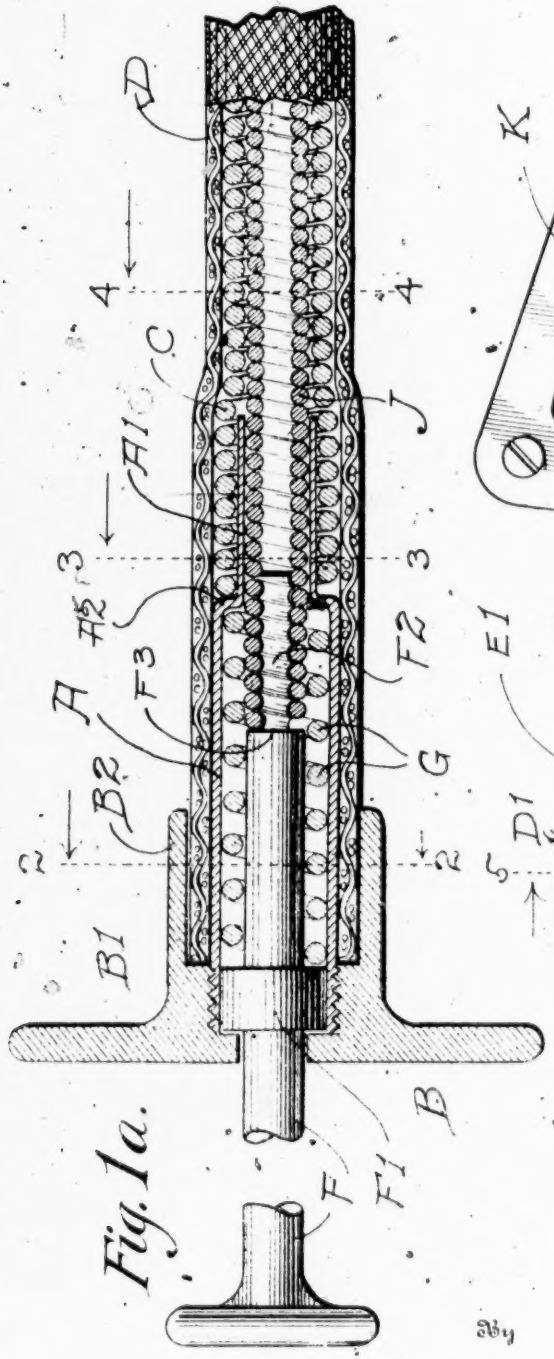


Fig. 1a.

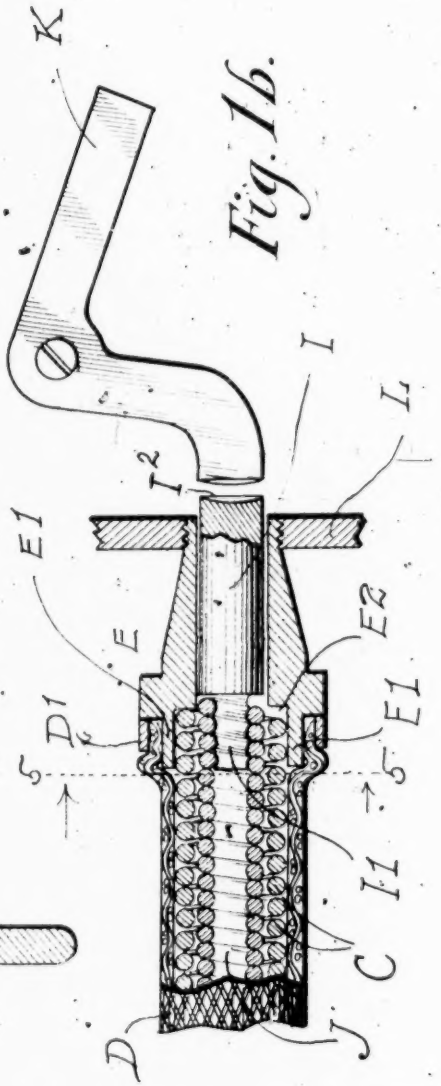


Fig. 1b.

Inventor

Charles B. Gray

By Cyrus Keller

Attorney

C. B. GRAY.
POWER TRANSMITTING MECHANISM.
APPLICATION FILED FEB. 7, 1918.

1,314,867.

Patented Sept. 2, 1919
2 SHEETS—SHEET 2.

Fig. 3.

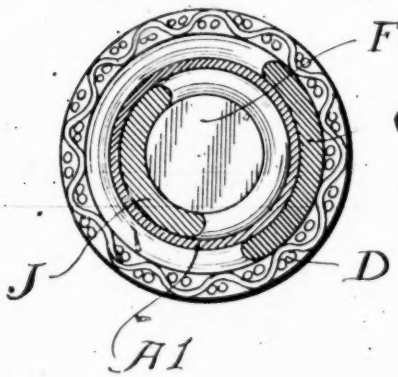


Fig. 4

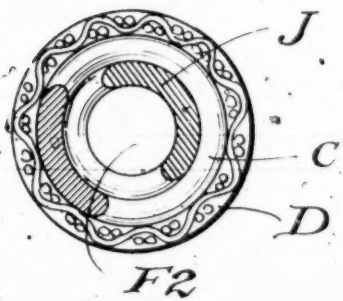


Fig. 5.

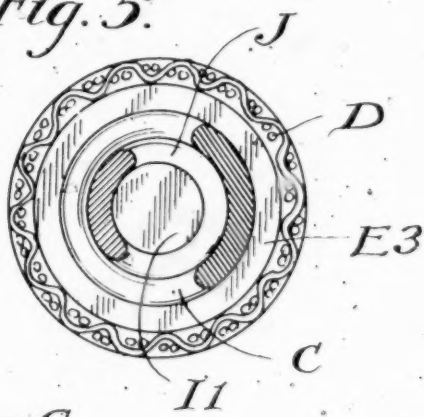
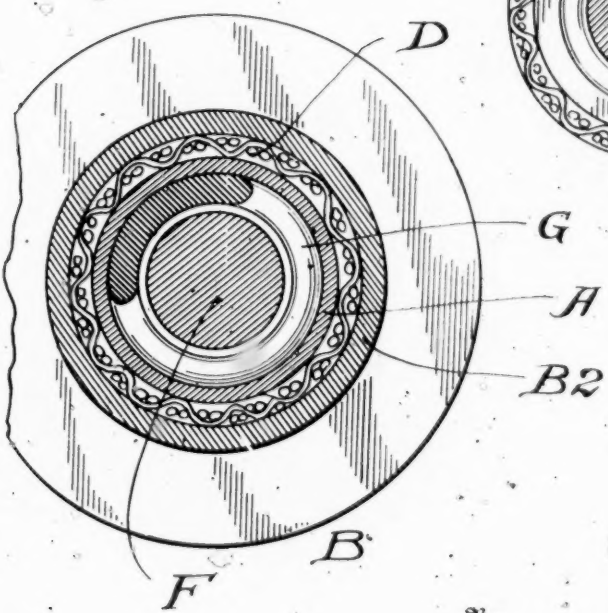


Fig. 2.



Inventor
Charles B. Gray

By Cyrus Keller
Attorney

UNITED STATES PATENT OFFICE.

CHARLES B. GRAY, OF KNOXVILLE, TENNESSEE.

POWER-TRANSMITTING MECHANISM.

1,314,867. Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed February 7, 1918. Serial No. 215,885.

To all whom it may concern:

Be it known that I, CHARLES BAXTER GRAY, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Power-Transmitting Mechanism, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to mechanism for transmitting power through endwise reciprocation of a member of the mechanism. The mechanism is applicable for use as actuating means for the shutters of cameras, and as an actuating or releasing means for various kinds of apparatus.

The object of the invention is to produce such a transmitting mechanism in flexible form permitting repeated bending without injury to the mechanism, and in a form permitting the attainment of precise movement.

In the accompanying drawings,

Figures 1ª and 1ᵇ together present a longitudinal view of a mechanism embodying my improvement, portions being in section;

Fig. 2 is a section on the line, 2—2, of Fig. 1, looking toward the left;

Fig. 3 is a section on the line, 3—3, of Fig. 1, looking toward the left;

Fig. 4 is a section on the line, 4—4, of Fig. 1, looking toward the left;

Fig. 5 is a section on the line, 5—5, of Fig. 1, looking toward the right.

Referring to said drawings, A is a metallic tube or barrel having its left hand end screw-threaded into the contracted portion, B^1, of the outer head, B, whereby said barrel and said head are firmly but detachably joined to each other. The opposite end of said barrel is contracted to form a neck, A^1. At the junction of said neck with the body of said barrel is a shoulder, A^2. A stem, F, extends slidably through the head, B.

Within said head, the stem has an annular rib, F^1, which limits the movement of said stem toward the left or away from the neck, A^1, of the barrel, A. Between said annular rib and the shoulder, A^2, the stem, F is surrounded by an expanding coiled spring, G. Said spring abuts against the shoulder, A^2, and against the rib, F^1, and tends to move the stem, F, toward the left or away from the neck, A^1, so that, when said stem is free from pressure on its outer end in the direction of the barrel, the stem is held outward with the rib, F^1, bearing against the inner face of the wall of the head, B.

The neck, A^1, is loosely surrounded by the left hand end of a coiled spring wire tube, C. The right hand or inner end of said spring extends into an inner head, E. Said inner head has a tubular neck, E^1, in which is an annular shoulder, E^2, against which said spring abuts. Said spring rests loosely within said head. The head, B, and the head, E, are joined by a fiber fabric tube, D. At its left hand end, said fabric tube surrounds the barrel, A, and the head, B, has a tubular extension, B^2, surrounding said fabric tube. The fabric is secured to the barrel, A, by means of a suitable adhesive. At the right hand end, the fabric tube surrounds the neck, E^1, on the head, E, and a band, D^1, surrounds the fabric tube and binds the latter to said neck.

The coiled spring wire tube, C, is so wound as to leave spaces between the coils, and said tube is made long enough to cause it to be under compression endwise when the fiber fabric tube is under tension. Thus the fiber fabric tube is normally held under tension and the coiled spring wire tube, C, is normally exerting endwise pressure. And the fiber fabric tube limits the endwise expansion of said wire tube. The length of the fiber fabric tube and the coiled wire tube, C, and the spacing between the coils of the tube are so proportioned as to still leave spaces between the coils of the tube, C, when the latter is held under restraint by the fiber fabric tube against full endwise expansion. The spaces thus left between the coils of the tube, C, are sufficient to allow approach of adjacent coils toward each other at the inner side of the curve while there is limited or substantially no expansion of the coils at the outer side of the curve when the tube is bent.

On the inner or right hand end of the stem, F, is a neck, F^2, at the base of which is an annular shoulder, F^3. Said neck is surrounded by one end of a coiled wire tube, J. The opposite or right hand end of said tube extends around a neck, I^1, on a slide member, I, which is slidable endwise in the

head, E. The engagement between the tube, J, and the necks, F^2 and I^1, may be frictional; but said necks are preferably screw-threaded to conform approximately to the coils of the tube, J, in order that said tube may be threaded to said necks. The tube, J, is preferably so formed as to cause its coils to normally press firmly against each other, in order that there may be no lost motion when the stem, F, is pressed inward, in the direction of the head, E, the stem, F, pushing the tube, J, and the tube, J, pushing the slide member.

The slide member, I, may be regarded as the final member in the transmission. In the particular form shown in the drawings the outer end of said member has a concave face, I^2, adapted to bear against a pivoted member, K, which is to be moved by the outward movement of the slide member, the head, E, being screwed into a relatively stationary wall, L, and thus held in relation to the member, K.

The coils of the tube, C, are wound in one direction while the coils of the tube, J, are preferably wound in the opposite direction.

As above described, the tube, J, is held to the neck, F^2, of the stem, F, and the slide member, I, is held to the tube, J, by means of the neck, I^1. After unscrewing the head, B, from the barrel, A, the stem, F, together with the spring tube, J, and the slide member, I, may be drawn out endwise, toward the left, through the barrel, A, the diameter of the tube, J, and the slide member being of less diameter than the interior diameter of the tube, C.

The fabric tube, D, may be detached by removing the band, D^1, and softening or dissolving the adhesive by which said fabric is secured to the barrel, A.

This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, C, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely-wound, adapts itself to the bending without kinking.

Practice has shown that a mechanism of this construction may be bent an indefinite number of times without kinking or otherwise disabling the coiled wire tubes.

The reach of the slide member, I, may be adjusted by moving the tube, J, on both or either of the necks, F^2 and I^1. In this manner a very precise adjustment may be made.

The size of the mechanism is to be varied to conform to the amount of power to be transmitted and to the size of the apparatus with which the transmission mechanism is to be associated. For some purposes the mechanism may be as large or larger than shown by the drawings. For example, in power-driven vehicles, the mechanism may be made large and used for power transmission to some point distant from the driver, the stem, F, being used as a pedal.

I claim as my invention,

1. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

2. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

3. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, yielding means for normally holding said stem at its outer limit, a slide member in the other of said heads, and means intervening and adjustably surrounding said stem and said slide

member for the transmission of endwise motion from said stem to said slide member, substantially as described.

4. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening and joined to said stem and said slide member for the transmission of endwise motion from the stem toward and to the slide member, the inner head having an axial opening extending through said head and of sufficient diameter to allow the movement of the slide member through the head toward the outer head, and the inner diameter of the coiled spring wire tube being sufficient to allow the free passing of said slide member and said intervening means toward the outer head, whereby, after the detachment of the outer head, said intervening means and said slide member and said stem are together removable, substantially as described.

5. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and adjustably joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

6. In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and threaded to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described.

In testimony whereof I have signed my name this 1st day of February, in the year one thousand nine hundred and eighteen.

CHARLES B. GRAY.

Shafting
Flexible

1918

CONTENTS:

1. Application	1	26.	
2. Reg.	FEB 22 1918	27.	
3. Amendment C	May 27, 1918.	28.	
4. Reg.		29.	
5. Amendment B	June 18, 1918.	30.	
6. Reg.	JUL 1 1918	31.	
7. Amendment C	Jan 31, 1919	32.	
8.		33.	
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25.		50.	

215885 - 32

Serial No. 214,885. Div. 12.

2 Sheets Sheet 1

C. B. GRAY.

POWER TRANSMITTING MECHANISM.

APPLICATION FILED FEB. 7, 1918.

1,314,867.

Patented Sept. 2, 1919.

2 SHEETS—SHEET 1.

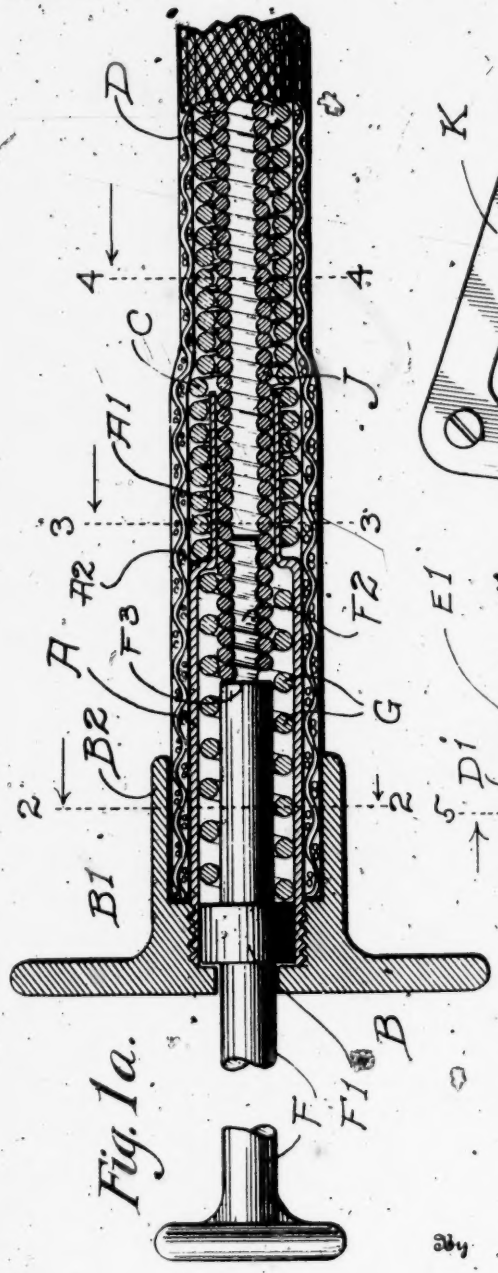


Fig. 1a.

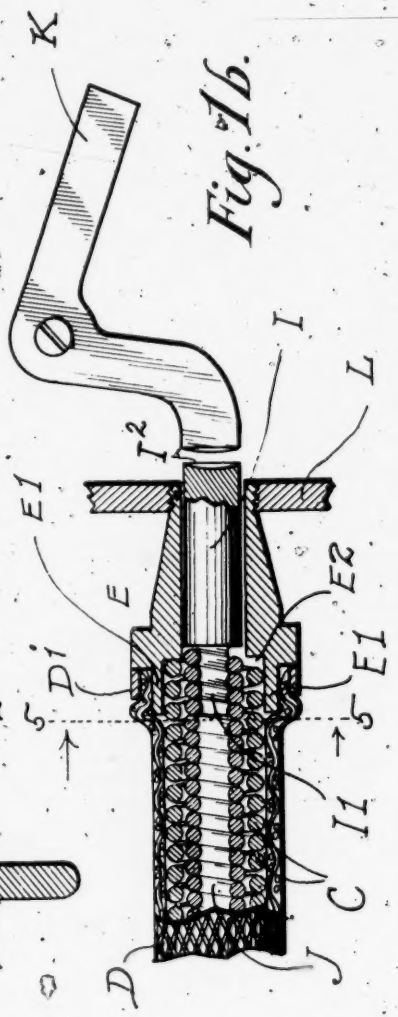


Fig. 1b.

Inventor

Charles B. Gray

By Cyrus Keller

Attorney

...VAL BOXES, PULLEYS, AND SHAFTING.
Shafting.
Flexible.
F.16 73-23-32

Serial No. 215 885 Div. 12
2 Sheets Sheet 2

C. B. GRAY.

POWER TRANSMITTING MECHANISM.

APPLICATION FILED FEB. 7, 1918.

1,314,867.

Patented Sept. 2, 1919.

2 SHEETS—SHEET 2.

Fig. 3.

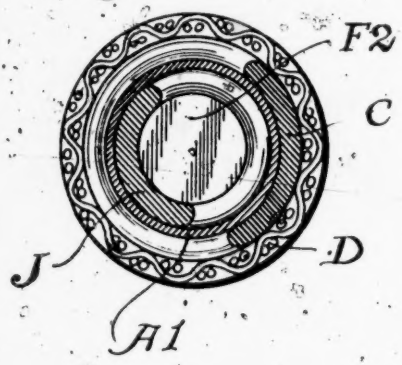


Fig. 4

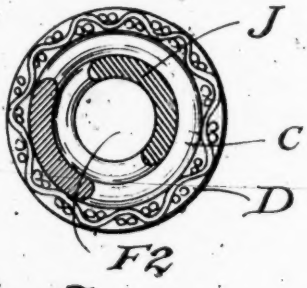


Fig. 5.

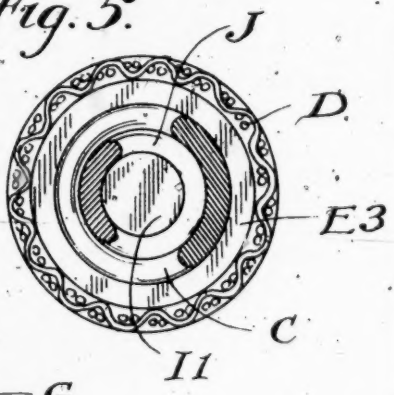
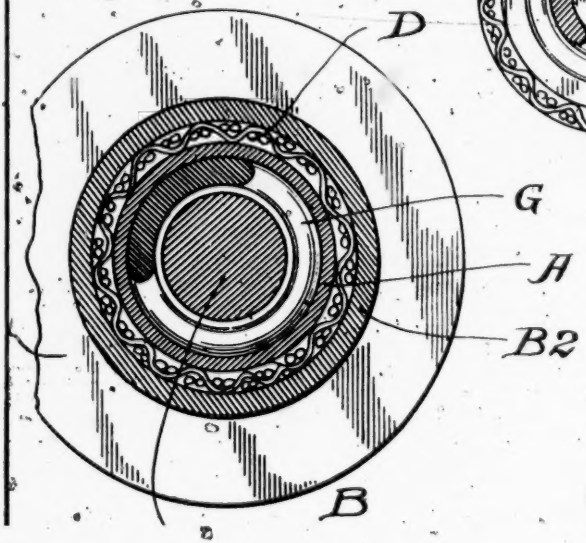


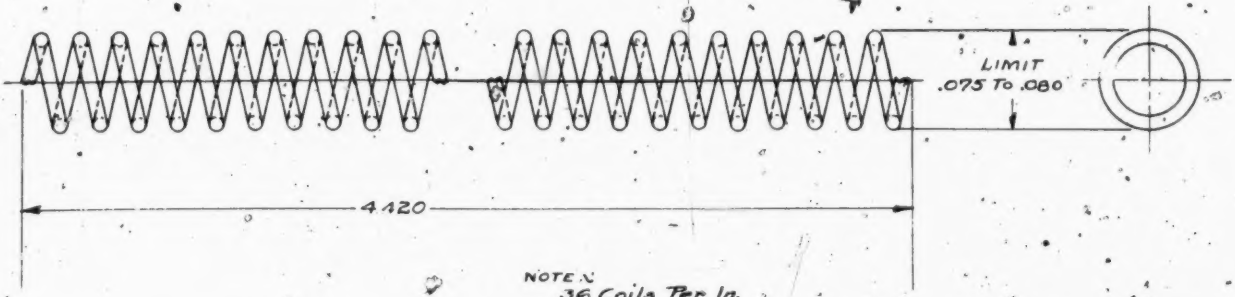
Fig. 2.



Inventor

Charles B. Gray

USED ON
#2-7" CABLE RELEASE



NOTE: 36 Coils Per In.

SPRING CASING

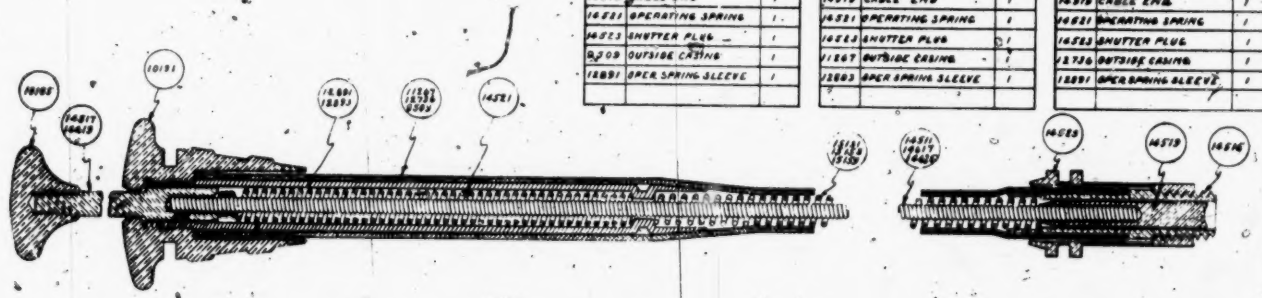
CHANGE NO.	CAMERA WORKS-E. K. CO.		
	CHANGES	DATE	BY
0	Mat. Was #30 (011) BR. W.	10-22-20	
	SCALE DES'GN AP'V'D BY		
	DRAWN BY S.E. DATE 5-8-18		
	CHECKED BY J.E.S. AP'V'D BY		
	MATERIAL #28 (.014) Brass Wire		
	PART NO. DRAWING 15131		

Defendants' Exhibit 3

USED ON 2-7 20-7 CABLE RELEASE		
PART NO.	NAME.	NO IN GROUP
16561	CABLE	1
10185	OPER. PLUNGER CAP	1
16517	OPERATING PLUNGER	1
10191	OPER. SPRG. SLEEVE CAP	1
15131	SPRING CASING	1
16515	SHUTTER PLUG SLEEVE	1
16679	CABLE END	1
16521	OPERATING SPRING	1
16523	SHUTTER PLUG	1
12709	OUTSIDE CASING	1
12891	OPER. SPRING SLEEVE	1

USED ON 13-J CABLE RELEASE		
PART NO.	NAME.	NO IN GROUP
16017	CABLE	1
10185	OPER. PLUNGER CAP	1
16519	OPERATING PLUNGER	1
10191	OPER. SPRG. SLEEVE CAP	1
15133	SPRING CASING	1
16516	SHUTTER PLUG SLEEVE	1
16518	CABLE END	1
16521	OPERATING SPRING	1
16523	SHUTTER PLUG	1
12767	OUTSIDE CASING	1
12803	OPER SPRING SLEEVE	1

USED ON 16-9 CABLE RELEASE		
PART NO.	NAME	NO IN GROUP
14026	CABLE	1
10186	OPER. PLUNGER CAP	1
16517	OPERATING PLUNGER	1
10191	OPER SPRG. SLEEVE CAP	1
10159	SPRING CASING	1
16515	SHUTTER PLUG SLEEVE	1
16519	CABLE END	1
16521	OPERATING SPRING	1
16523	SHUTTER PLUG	1
12736	OUTSIDE CASING	1
12891	OPER SPRING SLEEVE	1



Defendants' Exhibit 4

No 20-7 CABLE RELEASE Construction No 15134
No 2-7 CABLE RELEASE Construction No 15132
No 13-J CABLE RELEASE Construction No 15134
No 16-9 CABLE RELEASE Construction No 15133

CHANGE NO	CAMERA WORKS-E. K. CO CHANGES	DATE	BY
4-7	NO 20-7 CABLE RELEASE CONSTRUCTION CHANGED	9-18-18	JES

SCALE — DRAWN BY DMH DATE 8-16-18
CHECKED BY J.E.S. APP'D BY
MATERIAL
PART NO / DRAWING 15132

14 MAY 14 1918 APR 18

MAY 21 1918 EASTMAN KODAK COMPANY MAY 4 1918

CAMERA WORKS

ROCHESTER, N. Y.

Page 1

List of Parts to Make One Complete NO. 3-7 "CABLE RELEASE — 1 BB fa. 1 Bs, 1 Bs Auto Ld. 37PR.

DATE FOR USE WITH 2 BB fa. 3 Bs 7PR, 2 Bs + 3 Bs 7 Bus.

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
14521	OPERATING SPRING MUSIC WIRE	NO. 0 .0093 F & G	Gauge	1
10185	PLUNGER CAP BRASS ROD	9/32"		1
10191	OPERATING SPRING SLEEVE CAP BRASS ROD	7/16"		1
14515	SHUTTER PLUG SLEEVE BRASS ROD	1/8		1
14523	SHUTTER PLUG BRASS ROD	7/32"		1
14519	CABLE END BRASS Rod	.666		1
14517	OPERATING PLUNGER BRASS ROD	3/32"		1
12891	OPERATING SPRING SLEEVE BRASS TURF	.125 OUTSIDE DIA. .085 INSIDE DIA		1
15131	SPRING CASING BRASS WIR	.011	Purchased	1
14511	CABLE Piano Wire	.0087"		1
9801	OUTSIDE CASING LINEN SLEEVE		Purchased	1

D9

Defendants' Exhibit 9

EASTMAN KODAK COMPANY

CAMERA WORKS

ROCHESTER, N. Y.

Page NO. 2

List of Parts to Make One Complete NO.2-7" CABLE RELEASE 1 B.B. FOR 1A JR., 1A AUTO KOD

DATE 5/27/18 3 F.P.K., 2 B.B. FOR 3A F.P.K., 2C & 3A FOLD. BRO. ASSEMBLIES

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
14393	CABLE WITH PLUNGER Leaf 9 of 10			1
	CABLE		14511	1
	OPERATING PLUNGER		14517	1
14394	CABLE RELEASE COMPLETE		15131	1
	SPRING CASING		~~9507~~	
	OUTSIDE CASING		9509	1
	OPERATING PLUNGER CAP		10185	1
	OPERATING SPRING SLEEVE CAP		10191	1
	OPERATING SPRING SLEEVE		12891	1
	CABLE WITH PLUNGER		14393	1
	SHUTTER PLUG SEEEVE		14515	1
	CABLE END		14519	1
	OPERATING SPRING		14521	1
	SHUTTER PLUG		14523	1

Defendants' Exhibit 10

APR 12 1920

F[illegible]MAN KODAK COM[illegible] MAY 28 1918

CAMERA WORKS

ROCHESTER, N. Y.

Page _____

List of Parts to Make One Complete NO.2-7 CABLE RELEASE - 1 B.B. FOR 1A R. 1A AUTO KOD

DATE 5/16/18 3 F.P.K. - 2 B.B. FOR 3A F.P.K., 20 & 3A FOLD. BROWNIE.

PART No.	NAME AND MATERIAL	SIZE		FINISHED
[redacted]	OUTSIDE CASING			
9509	LINEN SLEEVING		PURCHASED	
10185	PLUNGER CAP			
	BRASS ROD	9/32"		
10191	OPERATING SPRING SLEEVE CAP			
	BRASS ROD	7/16"		
12891	OPERATING SPRING SLEEVE			
	BRASS TUBE	.125 OUTSIDE	A .095 INSIDE Ø	
14511	CABLE			
	PIANO WIRE NO. 00	.0087		
[redacted]	Shutter Plug Screw			
14515	BRASS ROD	1/8"		
14517	OPERATING PLUNGER			
	BRASS ROD	3/32"		
14515	CABLE END			
	BRASS ROD	.0		
14521	OPERATING SPRING			
	MUSIC WIRE	[illegible]		
14523	SHUTTER PLUG			
	BRASS ROD	[illegible]		
[illegible]	RING CASING			
	BRASS WIRE NO.30	.011	Purchased	

Defendants' Exhibit 10 (continued)

30

5/24/18

E ..MAN KODAK COMPANY MAY 28 1918

CAMERA WORKS

ROCHESTER, N. Y.

Page 2

List of Parts to Make One Complete NO. 2-7" CABLE RELEASE-1 B B FOR 1A S ..A AUTO. KOD

DATE 5/16/18 3 F.P.K. 2 B B FOR 3A F P K. 20 & 3A FOLD BRO. ASSEMBLIES

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
14393	CABLE WITH PLUNGER			1
	CABLE		14511	1
	OPERATING PLUNGER		14517	1
~~15132~~ 14394	CABLE RELEASE COMPLETE			1
	OUTSIDE CASING		9509 [redacted]	1
	OPERATING PLUNGER CAP		10185	1
	OPERATING SPRING SLEEVE CAP		10191	1
	OPERATING SPRING SLEEVE		12891	1
	CABLE WITH PLUNGER		14393	1
	Shutter Plug Sleeve [redacted]		15175 [redacted]	1
	CABLE END		14519	1
	OPERATING SPRING		14521	1
	SHUTTER PLUG		14523	1
	SPRING CASING	9507	15131	1

Defendants' Exhibit 10 (continued)

MAY 14 1918

APR 30 1918

MAY 21 1918

EASTMAN KODAK COMPANY

CAMERA WORKS

ROCHESTER, N. Y.

MAY 1918

Page 2

List of Parts to Make One Complete NO. 2-7 " CABLE RELEASE

DATE CABLE WITH see sheet bal ASSEMBLIES

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
14393	CABLE WITH PLUNGER			
	OPERATING PLUNGER		14517	
	CABLE		14511	
15132	CABLE RELEASE COMPLETE			
	OPERATING SPRING		14521	
	CABLE END		14519	
	OPERATING SPRING SLEEVE		12591	
	SHUTTER PLUG SLEEVE		14515	
	SHUTTER PLUG		14523	
	SPRING CASING		15131	
	CABLE WITH PLUNGER		14393	
	OUTSIDE CASING		9509	
	OPERATING PLUNGER CAP		10185	
	OPERATING SPRING SLEEVE CAP		10191	

OK

Defendants' Exhibit 10 (continued)

EASTMAN KODAK COMPANY

CAMERA WORKS

ROCHESTER, N. Y.

Page 1 to 49

List of Parts to Make One Complete NO.2-7" CABLE RELEASE- 1 B.B. FOR 1A JR. 1A AUTO. KOD

DATE 5/16/18 3 F.P.K. - 2 B.B. FOR 3A F.P.K. 2C & 3A FOLD. BRO.

PART No.	NAME AND MATERIAL	SIZE		REQUIRED
9509	OUTSIDE CASING			1
	LINEN SLEEVING		PURCHASED	
10185	PLUNGER CAP			1
	BRASS ROD	9/32"		
10191	OPERATING SPRING SLEEVE CAP			1
	BRASS ROD	7/16"		
12891	OPERATING SPRING SLEEVE			1
	BRASS TUBE	.125 OUTSIDE DIA. .085 INSIDE DIA.		
14511	CABLE			1
	PIANO WIRE NO. 00	.0087		
14515	SHUTTER PLUG SLEEVE			1
	BRASS ROD	1/8"		
14517	OPERATING PLUNGER			1
	BRASS ROD	3/32"		
14519	CABLE END			1
	BRASS ROD	.066		
14521	OPERATING SPRING			1
	MUSIC WIRE	NO.0 .0093 F & G. GAUGE		
14523	SHUTTER PLUG			1
	BRASS ROD	7/32"		
15131	SPRING CASING			1
	BRASS WIRE NO.30	.011	PURCHASED	

Defendants' Exhibit 10 (continued)

FORM 148

EASTMAN KODAK COMPANY

CAMERA WORKS

ROCHESTER, N. Y.

List of Parts to Make One Complete NO.2-7" CABLE RELEASE-1 B.B. FOR 1A JR. 1A AUTO. KOD. 3 F.P.K. ÷ 2 B.B. FOR 3A F.P.K. 2C & 3A FOLD. BRO.

DATE 5/16/18

PART NO.	NAME AND MATERIAL	SIZE	ASSEMBLIES	REQUIRED
14393	CABLE WITH PLUNGER			1
	CABLE		14511	1
	OPERATING PLUNGER		14517	1
15132	CABLE RELEASE COMPLETE			1
	OUTSIDE CASING		9509	1
	OPERATING PLUNGER CAP		10185	1
	OPERATING SPRING SLEEVE CAP		10191	1
	OPERATING SPRING SLEEVE		12891	1
	CABLE WITH PLUNGER		14393	1
	SHUTTER PLUG SLEEVE		14515	1
	CABLE END		14519	1
	OPERATING SPRING		14521	1
	SHUTTER PLUG		14523	1
	SPRING CASING		15131	1

Defendants' Exhibit 10 (continued)

Def Ex 11

Patent Dept.
5-95-13
File— Cable release

EASTMAN KODAK COMPANY

ROCHESTER, N.Y.

ADDRESS
CAMERA WORKS
343 STATE STREET

April 12, 1916.

EASTMAN KODAK CO.

APR 12 1916

PATENT DEPT.

Mr. C. L. Jenks,
Main Office.

Dear Sir:

Some time ago in discussing with you the cable release situation, I explained to you the advantage of having an open flexible spring instead of a close wound one. I am sending you four cable releases, two long and two short. One of each is made with an open spring. Nobody will have any difficulty in determining which is which. I am also sending you sample of each of the springs.

I wish you would send these to J. T. Clarke and advise him that we are having a good deal of breakage and defective cable releases on account of the closely wound spring. Wish you would get his opinion as to whether we can safely manufacture them this way and send them to Europe. At the same time, wish you would investigate whether we can make them in this country, and would like your advice on this just as soon as possible.

Very truly yours,

J. A. McJenkins

JAR EW

Defendants' Exhibit 11 ;

Patent Dept.
5-9553
File—Cable release

EASTMAN KODAK COMPANY

ROCHESTER, N.Y.

ADDRESS
CAMERA WORKS
333 STATE STREET

Dec. 24, 1915.

Left 6412

EASTMAN KODAK CO.
DEC 27 1915
PATENT DEPT.

Mr. C. L. Jenks,
Main Office.

Dear Sir:

I am sending you herewith cable release in which the push cable is made of wound spiral coil, same as the casing. This is much more flexible than the cable we have in use. The suggestion came from one of our employes, Ed. Daken on August 13, 1915. We made up a thousand of these cables and they work satisfactorily.

I wish you would look this up and see if this feature is patentable or whether there is anything to prevent our using it.

You might also, as soon as possible, advise me on the chain proposition for the same purpose which I submitted to you some time ago.

Very truly yours,

J. A. Robertson

ANSWERED BY JENKS

JAR EW

Defendants' Exhibit 12

D 14 al

EASTMAN KODAK COMPANY

ROCHESTER, N.Y. December Twelfth,
Nineteen Seventeen

Defendants' Exhibit 14

Mr. G. A. Rigge,
Camera Works.

For
G.A.R

Dear Sir:-

This is to confirm our conversation of yesterday concerning the proposed new metallic cable release. It was suggested that instead of having the outer coil or sheath wound closely for its entire length that a portion at or near each end be coiled more loosely with the convolutions spaced one from another. This would give the advantage of the separated convolutions at the points where the greatest wear comes and where the greatest need for flexibility exists.

The question of infringement remains the same in this country as it did at the time of the reports of Messrs. Church & Rich on Mar. 9, 1914 and July 14, 1916 when a tightly coiled sheath and a loosely coiled sheath, respectively, were discussed, and in each case it was held these could be made without infringement of the nearest U. S. patent No. 828,815. As long as this terminal spring in the present suggested structure is used purely as a sheath, this patent would not be infringed, as you stated this would not be used as the actuating spring for the button. If such a use were contemplated, this patent undoubtedly would be infringed, but we understand that this is not at all contemplated.

As to the infringement of British patent No. 13,157 of 1905, we are in considerable doubt. It will be recalled that the sheath closely wound throughout its entire length did not infringe any british patent, but that the sheath with separated convolutions

throughout its entire length was considered to infringe this british patent. We would not care to state, with any degree of confidence, whether or not the new suggested sheath would infringe this British patent in which the claim states that "the outer member consisting of a coiled wire is formed wholly or mainly with said coils other than touching one another on the abutting faces thereof." In the suggested sheath the greater proportion of the length is closely wound, so in this sense it is not made "mainly" with the separated convolutions. However, it is made with the separated convolutions at the places of the greatest importance, and we are unable to state how this claim would be interpreted. This question will be submitted to Mr. J. Thacher Clarke. This particular arrangement is novel in this country, but the results obtained are so similar to that of the British patent that it is of doubtful patentability. However, if it is to be used commercially, it undoubtedly would be the part of wisdom to apply for a patent.

-- SUMMARY --

The proposed sheath does not infringe any U. S. patents. The situation as regards the British patent is doubtful and will be referred to Mr. J. Thacher Clarke. If it is to be made commercially, a patent application should be filed.

Yours truly,

R. L. Stuckfort

Patent Attorney.

For File
G.A.R

RLP-HD

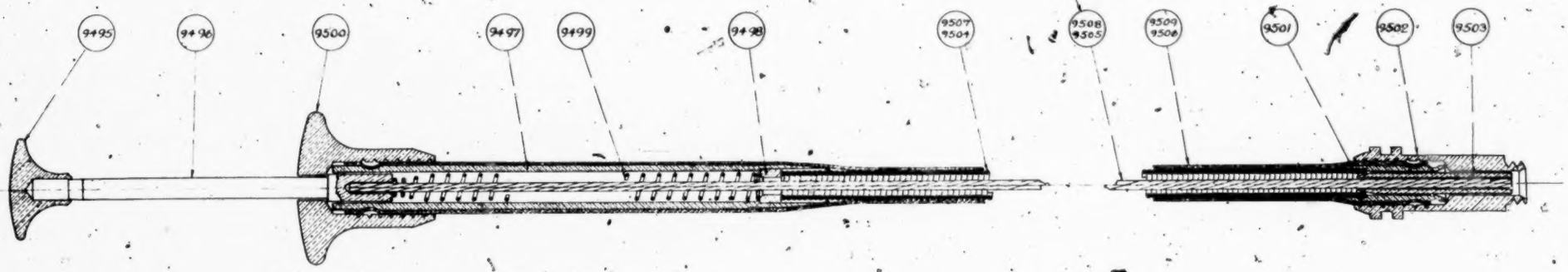
Copy to Mr. Robertson.

Defendants' Exhibit 14 (continued)

USED ON		
Part No.	NAME	No. in Set
9495	Operating Plunger Cap	1
9496	Operating Plunger	1
9497	Operating Spg. Sleeve	1
9498	Operating Spg. Seat	1
9499	Operating Spring	1
9500	Op. Spg. Sleeve Cap	1
9501	Shutter Plug Sleeve	1
9502	Shutter Plug	1
9503	Cable End	1
9507	Spring Casing (6")	1
9508	Cable	1
9509	Outside Casing	1
9510	7" Antinous Release Complete	

Not Used on 12" in place of 9507-8-9		
9504	Spring Casing (12")	1
9505	Cable	1
9506	Outside Casing	1
9511	12" Antinous Release Complete	

Length of Part "9505 = 11.07
" of " "9508 = 6.07



7" Antinous Release, Const. No. 9510.
12" Antinous. Release, Const. No. 9511.

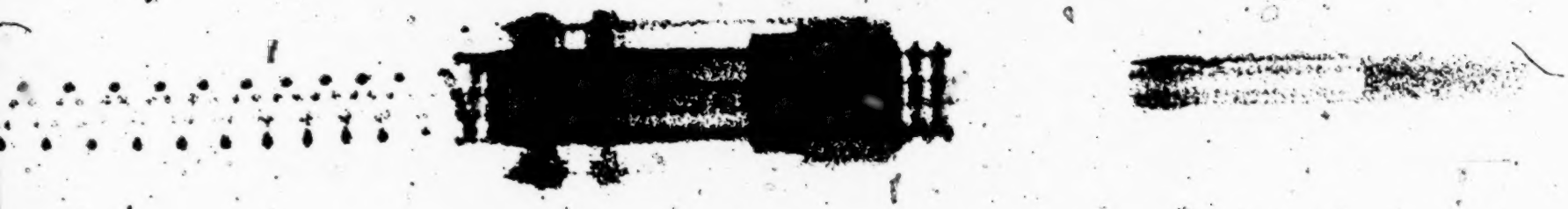
CAMERA WORKS-E. K. CO.		
CHANGES	DATE	BY
Redrawn	10-16-13	
LENGTH OF PART "9505 CHANGED FROM 6.97 TO 6.07	12-19-13	
7" ANTINOUS RELEASE CHANGED TO 7" ANTINOUS RELEASE	12-19-13	
SCALE 5 Times Size		
DRAWN BY H. S	DATE 10-16-13	
CHECKED BY	APV'D BY	
MATERIAL		
PART NO.	9511	
DRAWING		

Defendants' Exhibit 16

39

E. K. Co. No 16
Release - Tip only.

D. Ex. 17



Defendants' Exhibit 17

Defendants exhibit No. 18

United States Patent to

A. H. Edwards

No. 828,815 - granted August 14, 1906

40

No. 828,615. PATENTED AUG. 14, 1906.

A. H. EDWARDS.

MECHANISM FOR TRANSMITTING POWER IN VARYING DIRECTIONS.

APPLICATION FILED OCT. 20, 1905.

2 SHEETS—SHEET 1.

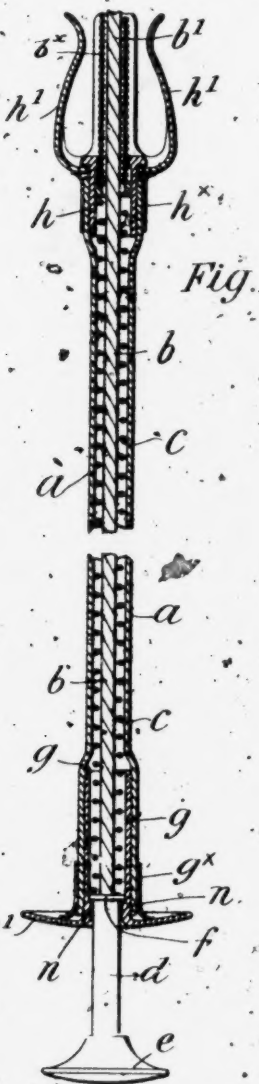


Fig. 1.

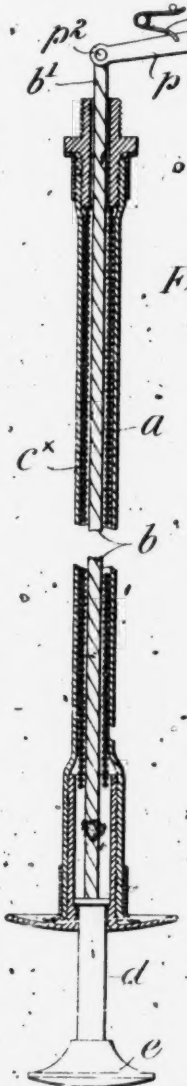


Fig. 4.

Witnesses.
W. Max Durall.
Geo. H. Bryce.

Inventor.
A. H. Edwards.
By Wilkinson & Fisher
Attorneys

HOA

41

No. 828,815. PATENTED AUG. 14, 1906.

A. H. EDWARDS.

MECHANISM FOR TRANSMITTING POWER IN VARYING DIRECTIONS.

APPLICATION FILED OCT. 20, 1905.

2 SHEETS—SHEET 2

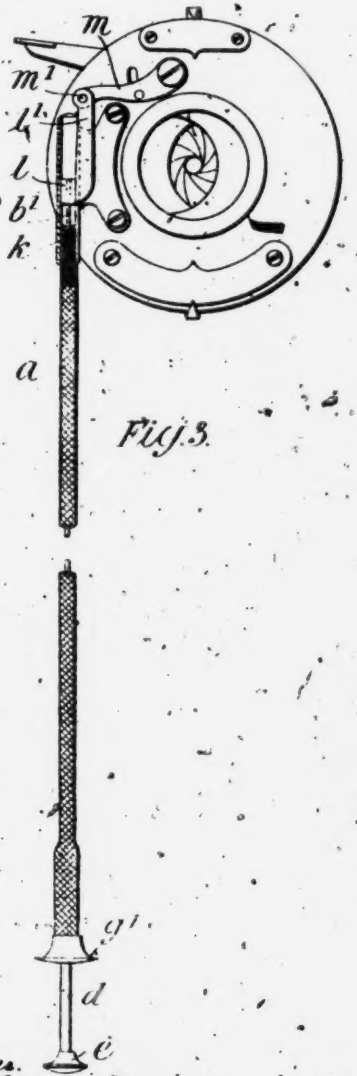


Fig. 3.

Fig. 2.

Witnesses.
W. Max. Durall
Geo. F. Bryce

Inventor
A. H. Edwards
By Wilkinson & Fisher
Attorneys

UNITED STATES PATENT OFFICE.

ARTHUR HENRY EDWARDS, OF STOKE NEWINGTON, LONDON, ENGLAND.

MECHANISM FOR TRANSMITTING POWER IN VARYING DIRECTIONS.

No. 828,815. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed October 20, 1905. Serial No. 283,696.

To all whom it may concern:

Be it known that I, ARTHUR HENRY EDWARDS, engineer, a subject of the King of Great Britain, residing at 96 Lordship road, Stoke Newington, London, England, have invented certain new and useful Improvements in Mechanism for Transmitting Power in Varying Directions, of which the following is a specification.

The object of this invention, primarily, is an improved power-transmission apparatus or mechanism for transmitting power in varying directions, especially suitable for photographic releases (i. *e.*, mechanism for releasing or operating photographic shutters) or for any other purposes to which same may be applicable where great flexibility of such mechanism is required.

Mechanism for the transmission of power in varying directions according to the present invention comprises a flexible outer member which is compressible both lengthwise and crosswise, but is inextensible beyond its normal length, an inner member which is incompressible lengthwise and is adapted to slide within said outer member, means attached to said inner and outer members, respectively, at one end whereby said inner member may be pushed inward to actuate the part to be operated, means at the other end of said inner and outer members to attach the former to the part to be operated by such push when the inner member is pushed inward, as aforesaid, and a spring arranged and adapted to normally keep the outer member stretched to the limit of its extensibility and also adapted to normally keep the inner member pressed outwardly, so as to be ready to be operated, all as hereinafter more fully explained, and finally pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a longitudinal sectional view, taken through flexible transmission mechanism in accordance with the present invention, arranged as a "release" for photographic shutters. Fig. 2 shows a photographic shutter of a well-known type as ordinarily fitted with pneumatic cylinder and piston for a pneumatic release and showing the present invention applied to such shutter in place of said pneumatic release. Fig. 3 shows a similar type of shutter, but instead of the pneumatic cylinder, suitable means are shown for attaching the flexible release according to the present invention. Fig. 4 shows a modification of the arrangement shown in Fig. 1.

Referring now to Figs. 1 to 3, *a* is the outermost member, which may be formed of any suitable fibrous textile fabric and advantageously is formed of braided cotton and is so constructed that although such braided outermost member *a* is compressible both lengthwise and crosswise, nevertheless it is inextensible beyond the normal length of such outermost cover.

b is the flexible innermost member and is advantageously composed of a strand of thin flexible wires in such wise as to be incompressible under the strains (pressure) to which same is normally liable.

c is an open coiled spring, which in the construction shown in Fig. 1 surrounds the innermost member *b* and forms the intermediate member between said innermost member *b* and the outermost member *a*.

The innermost member *b* is attached at one end to the shank *d* of the push-button *e*, provided with a collar or enlargement *f*, and at the other end *b'* said innermost member *b* is attached to or is otherwise arranged to actuate the part or thing to be operated, said innermost member being adapted to slide freely through and with respect to the intermediate member *c* and the outermost member *a*.

The outermost member *a* at one end is attached to the sleeve *g* by passing the end of this flexible outermost member *a* over said sleeve *g* down to the enlargement or flange *g'* thereon and is there secured by the collar $g^{\times}$, which is slid over said member *a* and sleeve *g* and clamped or clipped in position close adjacent the flange *g'*.

At the other end this outermost member *a* is attached to some fixed part of the frame or support carrying the thing or part to be operated. For example, as shown in Fig. 1, this outermost member *a* is clamped by the collar $h^{\times}$ to the sleeve *h*, on the outer end of which are carried spring-arms or prongs *h'*, which latter are adapted to be sprung over the nipple *i* of the ordinary pneumatic release *j*, such as illustrated in Fig. 2, or instead of attaching this end of the outermost member, as shown in Figs. 1 and 2, same may simply be passed up inside a tube or sleeve *k*, as shown in Fig. 3, and the said tube or sleeve squeezed or cramped onto this end of the outermost cover *a*, to thereby firmly grip and hold same, the end *b'* of the innermost member in the case illustrated in Fig. 2 passing up against the inside of the pneumatic cylinder *j*, whereby the latter is raised, as in the case

of pneumatic pressure, or said end b' of the innermost member b may be attached to the slide l in the tube k, (see Fig. 3,) the arm l' attached to said slide being at its other end pivoted at m' to the lever m, by which the shutter is operated or released.

As shown in Fig. 1, it may be desirable to surround the end b' of the innermost member with a closely-coiled wire, (designated at $b^{\times}$,) which will serve to guide this end of the innermost member.

The open coiled spring c, forming the intermediate member, at one end bears against the sleeve h, to which the outermost member is attached, and at its other end said spring c bears against the end of the shank d of the push-button, which end is enlarged at f to form a stop which bears against an internal abutment or shoulder n, formed in the sleeve g, said coiled spring c being normally held in compression between the sleeve h and the said abutment n in the sleeve g in such wise that the flexible outermost member a is normally kept stretched to the utmost limit of its extensibility lengthwise by the action of said spring c, and, furthermore, as this spring c is arranged to act on the shoulder or innermost end of the shank d of the push-piece to which the innermost member b is attached, consequently said shank d is normally kept pressed outwardly with the stop f pressed against the abutment n, and thus the innermost member b is normally kept pressed outwardly in operative position—*i. e.*, in position for the operator to push same inward when it is desired to release or operate the shutter, &c.—and thus the coiled spring c not only serves as guide or means to enable the flexible innermost member to be slid or moved longitudinally with respect to the outermost member, as well as said intermediate member; but this intermediate member also, according to this invention, is arranged as a coiled spring with the dual purposes and having the following dual functions: First, it normally keeps the flexible outermost member (of the aforesaid character) stretched to the limit of its extensibility; and, second, it normally keeps the innermost member or the end of the push-piece thereon pressed outwardly in readiness for the operator to push same inward to operate the part or thing to be operated.

In the modification shown in Fig. 4 the outermost member a and the innermost member b are identical or similar in all respects to the members a and b described and shown in Fig. 1; but the intermediate member $c^{\times}$ in the modification illustrated in Fig. 4 is not arranged as a spring, but is formed as a closely-coiled wire which is interposed between the inner and outer members a and b, while an external spring o is arranged to act on the lever or arm p, pivoted at one end p', and at the other end p^2, pivoted to the end b' of the innermost member b, so that, as will be obvious, this spring o (carried on some fixed part of the frame of the thing to be operated) will serve the same dual functions as the spring c in Fig. 1—namely, to normally keep the outermost member stretched to the limit of its extensibility and to normally keep said innermost member pressed outwardly ready to be operated.

What I claim is—

1. Mechanism for the transmission of power in varying directions; comprising a flexible outer member which is compressible lengthwise and crosswise but is inextensible beyond its normal length, an inner member which is incompressible lengthwise and is adapted to slide within said outer member, means attached to said inner and outer members respectively at one end whereby said inner member may be pushed inward, means at the other end of said inner and outer members to attach the former to the part to be operated when the inner member is pushed inward as aforesaid, and a spring adapted to normally keep the outer member stretched to the limit of its extensibility and also adapted to normally keep the inner member pressed outwardly so as to be ready to be operated substantially as and for the purposes described.

2. Mechanism for the transmission of power in varying directions; comprising a flexible outer member composed of fibrous material which is compressible lengthwise and crosswise but is inextensible beyond its normal length, an inner member which is incompressible lengthwise and is adapted to slide within said outer member, means attached to said inner and outer members respectively at one end whereby said inner member may be pushed inward, means at the other end of said inner and outer members to attach the former to the part to be operated when the inner member is pushed inward as aforesaid, and a spring adapted to normally keep the outer member stretched to the limit of its extensibility and also adapted to normally keep the inner member pressed outwardly so as to be ready to be operated, substantially as and for the purposes described.

3. Mechanism for the transmission of power in varying directions; comprising a flexible outer member of braid which is compressible lengthwise and crosswise but is inextensible beyond its normal length, an inner member which is incompressible lengthwise and is adapted to slide within said outer member, means attached to said inner and outer members respectively at one end whereby said inner member may be pushed inward, means at the other end of said inner and outer members to attach the former to the part to be operated when the inner member is pushed inward as aforesaid, and a

spring adapted to normally keep the outer member stretched to the limit of its extensibility and also adapted to normally keep the inner member pressed outwardly so as to be ready to be operated substantially as and for the purposes described.

4. Mechanism for the transmission of power in varying directions; comprising a flexible outer member of braided fibrous material which is compressible lengthwise and crosswise but is inextensible beyond its normal length, an inner member which is incompressible lengthwise and is adapted to slide within said outer member, means attached to said inner and outer members respectively at one end whereby said inner member may be pushed inward, means at the other end of said inner and outer members to attach the former to the part to be operated when the inner member is pushed inward as aforesaid, and a spring adapted to normally keep the outer member stretched to the limit of its extensibility and also adapted to normally keep the inner member pressed outwardly so as to be ready to be operated substantially as and for the purposes described.

5. Mechanism for the transmission of power in varying directions; comprising a flexible outermost member which is inextensible lengthwise, a flexible innermost member which is incompressible lengthwise, and an intermediate member consisting of a coiled spring surrounding the innermost member and interposed between the latter and the outermost member and so connected at each end that the innermost member will thereby be maintained in operative position and adapted at the same time to normally keep the flexible outermost member stretched to the limit of its extensibility, substantially as and for the purposes described.

6. Mechanism for the transmission of power in varying directions; comprising a flexible outermost member which is inextensible lengthwise but is compressible crosswise a flexible innermost member which is incompressible lengthwise and an intermediate member consisting of a coiled spring surrounding the innermost member and interposed between the latter and the outermost member and so connected at each end that the innermost member will thereby be maintained in operative position and adapted at the same time to normally keep the flexible outermost member stretched to the limit of its extensibility substantially as and for the purposes described.

7. Mechanism for the transmission of power in varying directions; comprising a flexible outermost member which is inextensible lengthwise but is compressible crosswise, a flexible innermost member which is incompressible lengthwise and an intermediate member consisting of an open coiled spring surrounding the innermost member and interposed between the latter and the outermost member and so connected at each end that the innermost member will thereby be maintained in operative position and adapted at the same time to normally keep the flexible outermost member stretched to the limit of its extensibility, substantially as and for the purposes described.

8. Mechanism for the transmission of power in varying directions; comprising a flexible outermost member which is inextensible lengthwise, a flexible innermost member which is incompressible lengthwise, and an intermediate member consisting of a coiled spring surrounding the innermost member and so interposed between the latter and the outermost member as to engage that end of the innermost member which is to be acted on by the operator and the opposite end of said outermost member in such wise that the said end of the innermost member will be normally kept pressed outward and means to enable the operator to push inward said innermost member substantially as and for the purposes described.

9. Mechanism for the transmission of power in varying directions comprising a flexible outermost member composed of fibrous material which is inextensible lengthwise but compressible crosswise, a flexible innermost member which is incompressible lengthwise and an intermediate member consisting of a coiled spring surrounding the innermost member and so interposed between the latter and the outermost member as to engage that end of the innermost member which is to be acted on by the operator and the opposite end of said outermost member in such wise that the said end of the innermost member will be normally kept pressed outward and means to enable the operator to push inward said innermost member substantially as and for the purposes described.

10. Mechanism for the transmission of power in varying directions comprising a flexible outermost member of braid which is inextensible lengthwise a flexible innermost member which is incompressible lengthwise and an intermediate member consisting of a coiled spring surrounding the innermost member and so interposed between the latter and the outermost member as to engage that end of the innermost member which is to be acted on by the operator and the opposite end of said outermost member in such wise that the said end of the innermost member will be normally kept pressed outward and means to enable the operator to push inward said innermost member substantially as and for the purposes described.

11. Mechanism for the transmission of power in varying directions comprising a flexible outermost member of braided fibrous material which is inextensible lengthwise a

flexible innermost member which is incompressible lengthwise and an intermediate member consisting of a coiled spring surrounding the innermost member and so interposed between the latter and the outermost member as to engage that end of the innermost member which is to be acted on by the operator and the opposite end of said outermost member in such wise that the said end of the innermost member will be normally kept pressed outward and means to enable the operator to push inward said innermost member substantially as and for the purposes described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ARTHUR HENRY EDWARDS.

Witnesses:

H. D. JAMESON.

A. NUTTING.

United States Patent to

C. E. Duryea

No. 1,072,439 - granted September 9, 1913

C. E. DURYEA.

MECHANISM FOR TRANSMITTING POWER AND MOTION.

APPLICATION FILED MAY 9, 1913.

1,072,439. Patented Sept. 9, 1913.

Fig. 1.

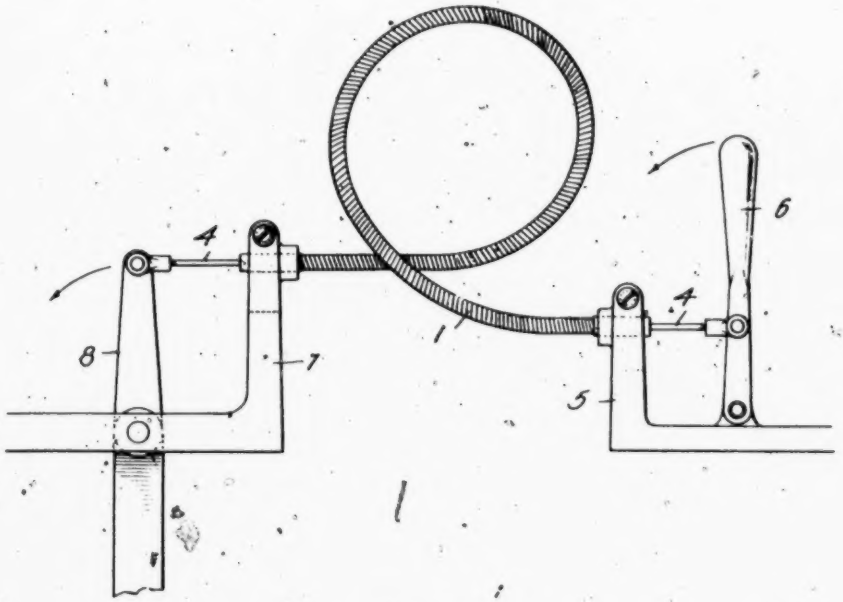


Fig. 2.

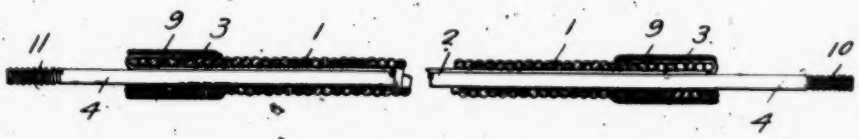


Fig. 3.

Witnesses

L. H. Schmidt.

R. R. Bond.

Inventor

CHARLES E. DURYEA,

By E. R. Bond

Attorney

UNITED STATES PATENT OFFICE.

CHARLES E. DURYEA, OF SAGINAW, MICHIGAN.

MECHANISM FOR TRANSMITTING POWER AND MOTION.

1,072,439. Specification of Letters Patent. Patented Sept. 9, 1913.

Application filed May 9, 1912. Serial No. 696,894.

To all whom it may concern:

Be it known that I, CHARLES E. DURYEA, a citizen of the United States of America, and resident of Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Mechanism for Transmitting Power and Motion, of which the following is a specification.

My invention relates to that class of devices intended to operate movable apparatus at some distance from the operating member and particularly in such cases as those wherein the operating and the operated positions are not in a positive relation to each other but vary in their distance so that usual operating members must be constructed with considerable complication to permit this varying distance.

My invention is designed more particularly as an improvement upon those devices consisting of a flexible incompressible member surrounding a flexible inextensible member quite commonly known as Bowden wire. My device, however, permits both pulling and pushing, whereas the common constructions permit only pulling on the inextensible member or in lieu thereof pushing on the incompressible member and in order to get motion in the opposite directions, either a second set must be used or springs at the opposite end to pull in the contrary direction must be employed. I overcome these objections by rendering the flexible outer member inextensible as well as incompressible and by using for the inner member a wire of high elasticity which, although sufficiently flexible for all common conditions, is sufficiently stiff to permit of both pulling and pushing to transmit the usual power required, such as to operate throttles of engines on automobiles, boats and aeroplanes or to operate brakes and do many such services.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

I accomplish the objects of my invention by the mechanism shown in the accompanying drawings, in which—

Figure 1 is an elevation showing one application of my improved push and pull wire. Fig. 2 is a sectional detail showing more specifically the construction of the novel member. Fig. 3 is a cross section through the member, on an enlarged scale.

Like numerals of reference indicate like parts throughout the different views.

Referring to the drawings, the incompressible member 1 is usually a coil of spring wire closely wound so that each coil rests against its next adjacent neighbor and thus it resists compression. While it is possible by the use of heavy wire wound under some torsion to make these coils press against each other with considerable force, there is always danger that they will be sprung apart and become longer than their original length with accompanying compressibility which is detrimental to the device. To prevent this stretching or lengthening, I pass through the coil 1 a single strand of wire 2 and fasten its ends to the ends of the coil 1, in any suitable manner, as shown at 3 in Fig. 2. It is now quite evident that the coil 1 cannot be extended unless the wire 2 is broken and it being of high grade spring wire will resist heavy pulls and yet be sufficiently flexible to permit usual movements like the motion of the bicycle handle bar or the action of the auto body on its springs. Since the coil 1 is now rendered inextensible by the wire 2 and is incompressible because its coils lie against each other, it is evident that the lineal distance between its ends measured along the axis of the coil 1 is constant even though the relation of the ends to each other in a straight line may be widely varied. It is also evident that if a wire 4 be passed through the coil 1, the amount of wire inside the coil will always be the same as the length of the coil, since both the coil 1 and the wire 4 are both incompressible and inextensible. It is, therefore, evident that if one end of the coil 1 is fastened to the bracket 5 carrying the operating handle 6 and the other end of 1 is fastened to the bracket 7 carrying the operated throttle lever 8 and the wire 4 is attached at its opposite ends to the levers 6 and 8 respectively, that the motion of the handle 6 in either direction, as indicated by the arrow will move the lever 8 in like direction, and to like amount, practically as though the handle of the lever 6 was attached to the lever 8 solidly. Further, that this perfect transferrence of movement in either direction takes place even though the bracket 5 may be widely moved or may be in motion with respect to the bracket 7.

It is evident that more than one wire 2 may be used inside the coil 1, or that more than one wire 4 may pass through the coil 1, the object of the multiple wires 2 being to secure additional strength and of the multiple wires 4 to operate additional devices from additional handles. The limit is, of course, the friction that may be induced by multiple wires rubbing on each other or the slight amount of lost motion which may arise from these wires not perfectly fitting the space in which they lie. It is usually common to fill the interstices of such a device with heavy oil or light grease to both protect from rust and moisture and to insure easy movement. The exact size of the apparatus and its amount of flexibility is a matter depending upon the amount of power to be transmitted, but for usual bicycle and auto engine throttles the wire 4 works well if about one-sixteenth inch diameter and the coil 1 if of three-sixteenth inch diameter. The thickness of the wire of which the coil 1 is formed is not very material so long as there is sufficient space inside the coil for the wire 4 and the wire 2 and in my device, which depends upon the wire 2 for the inextensibility of the coil 1, some weight and cost is saved by making the coil 1 of a wire of smaller diameter than can be used successfully with other methods.

The ends of the coil may be covered with rubber or other material 9 which also covers the attached ends of the wire 2, and the ends of the wire 4 may be attached to their respective members in any suitable way; for instance, the ends of the wire may be screw-threaded, as seen at 10 and 11, for connection with the handle 6 and lever 8, or these ends may be soldered or otherwise affixed in position.

From the foregoing, it will be seen that I have devised a very simple, yet efficient and durable member embodying the requisite amount of flexibility, yet so constructed as to be employed for both pushing and pulling, and while the structural embodiment of the invention as hereinbefore disclosed is what I at the present time consider preferable, it is evident that the same is subject to changes, variations and modifications in proportions, relative arrangement of parts, etc., without departing from the spirit of the invention or sacrificing any of its advantages. I, therefore, do not intend to restrict myself to the exact construction herein disclosed, but reserve the right to make such changes, variations and modifications as come properly within the scope of the protection prayed.

What is claimed as new is:—

1. A flexible power-transmitting ligament comprising a flexible non-compressible member, and a non-compressible non-extensible member movable therethrough, and inextensible means connecting the ends of said first-named member for holding the same against extension.

2. A power transmitting device comprising a non-compressible normally non-extensible hollow flexible member, inextensible means secured thereto for holding it against extension, and a non-compressible, non-extensible member slidably mounted within said hollow member.

3. A power transmitting device comprising a coiled member, means within the same joining its ends to prevent its extension, and a non-compressible, non-extensible member loosely received in said coil.

4. A power transmitting element comprising a flexible non-compressible member comprising a coil, an attaching member movable within the same, and means within and joining the ends of said coil for holding said coil against extension.

5. A power transmitting element comprising a flexible non-compressible member comprising a coil, an attaching member movable within the same, and means within and joining the ends of said coil for holding said coil against extension and compression.

6. A power transmitting element comprising a non-compressible, non-extensible element embodying a non-compressible non-extensible coil, inextensible means carried by and secured to the coil for holding the same against extension, and a non-compressible non-extensible member movable relatively to said coil.

7. A power transmitting element comprising a coiled member, a flexible non-extensible wire extending within the same and holding the coil against extension, and a non-compressible, non-extensible member loosely received within the coil.

Signed by me at Saginaw, Mich., this 6th day of May 1912.

CHARLES E. DURYEA.

Witnesses:
GEORGE GALLUP,
CARL E. ROGUER.

United States Patent to

Dakin & Underwood

No. 1,297,327 - granted March 18, 1919

49

E. W. DAKIN & E. E. UNDERWOOD.
SHUTTER OPERATING DEVICE.
APPLICATION FILED OCT. 15, 1917.

1,297,327. Patented Mar. 18, 1919.

Fig. 1

Fig. 2

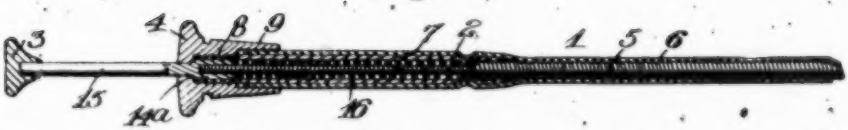


Fig. 3

WITNESSES:
Walter D. Cuyler
George D. Powell

INVENTORS
Edward W. Dakin
Ernest E. Underwood
BY
Their ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD W. DAKIN AND ERNEST E. UNDERWOOD, OF ROCHESTER, NEW YORK, ASSIGNORS TO EASTMAN KODAK COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

SHUTTER-OPERATING DEVICE.

1,297,327. Specification of Letters Patent. Patented Mar. 18, 1919.

Application filed October 15, 1917. Serial No. 196,611.

To all whom it may concern:

Be it known that we, EDWARD W. DAKIN and ERNEST E. UNDERWOOD, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Shutter-Operating Devices, and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings forming a part of this specification and to the reference numerals marked thereon.

Our present invention relates to photography and more particularly to shutter actuating devices of the type known as cable releases in which two laterally flexible members, one working within the other and terminating in relatively movable finger-pieces, are connected, respectively, to a shutter casing and an operating part thereof to afford a means for actuating the shutter without jarring the camera and in a convenient and comfortable manner and the invention has for its object to increase the flexibility of the members so that extreme distortions thereof will not result in permanent kinks or bends that would interfere with the relative sliding movement of the members. A further object of the invention is to improve the means of connecting the device to the shutter casing and to these and other ends the invention resides in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is a side view of a cable-release constructed in accordance with and illustrating one embodiment of our invention;

Fig. 2 is an enlarged longitudinal sectional view of the outer end of the device, and

Fig. 3 is a similar view of the inner end of the device.

Similar reference numerals throughout the several views indicate the same parts.

The device comprises an outer flexible casing or tubular guide indicated generally at 1 and an inner flexible cable 2 terminating at its outer end in a finger-piece 3. The outer end of the casing 1 is also provided with a finger-piece 4 and when these finger-pieces are pressed together the shutter is tripped or actuated as one of the members is connected to the shutter casing and the other to a controlling part of the shutter mechanism as will presently appear. In the present instance, the cable or inner member is a thrust member that is pushed against the shutter part and the casing takes the pull or reaction therefrom being connected to the shutter casing. The casing 1 must therefore be inextensible and to this end it embodies a helical wire coil 5 covered with a textile stocking 6 of inextensible weave. The outer end of the helix 5 is secured within the end of a sleeve 7 the opposite end of which is screwed into the finger-piece 4 at 8, while the stocking 6 is drawn over the sleeve 7 and secured between it and a collar 9 on the finger-piece 4 being preferably cemented to the sleeve.

At its inner end the casing 1 terminates in a tip indicated generally at 10. This tip preferably comprises an inner tube 11 threaded at 12 which threaded portion projects from a finger grip 13 in the form of a sleeve screwed onto the portion 12 to have a fixed relation to the tube. One end of the latter is reduced at 14 to receive the stocking 6 between it and the finger grip sleeve 13 which stocking is preferably cemented to the tube. By means of the part 13, the portion 12 of the tube 11 may be screwed into a suitable socket in the shutter casing. The inner end of the helix 5 abuts the end of the tube 11 being held there by the stocking.

The inner flexible cable 2 we also form of a closely wound incompressible wire helix which is extremely flexible laterally but is unyielding with respect to an endwise thrust against it. It is as flexible as the outer helix 5 and more so and hence will readily submit to any bending movement that its casing can undergo. At its outer end it is anchored in a head 14^a on the stem 15 of finger-piece 3 which stem is guided in finger-piece 4. A spring 16 coiled about the cable within the sleeve 7 bears at one end against said sleeve and at the other end against the head 14^a to normally hold the stem 15 and finger-piece 3 extended and the opposite end of the cable retracted, said head 14^a engaging against the finger-piece 4 to limit this movement.

The inner end of the cable 2 is fixed within a sleeve 17 shown in Fig. 3 as by prick punching said sleeve 17 at 18. This sleeve slides freely within the tube 11 the central bore of which is regular and continuous to

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provide a smooth guide. When the finger-pieces are pressed together and the cable is thrust through its casing the sleeve 17 constitutes an inflexible plunger of sufficient length to produce a direct thrust against the shutter operating member or trip without possibility of deflection.

A device constructed in accordance with our invention is efficient and serviceable and so supple as not to be disabled or its efficiency reduced by any twisting or bending which it would be apt to undergo even with careless use.

We claim as our invention:

1. In a shutter release, the combination with an outer flexible tubular casing and an inner flexible cable, both terminating at one end in finger-pieces one member being incompressible and adapted to act as a thrust member against a shutter part and the other inextensible to take the reaction therefrom as the finger-pieces are moved relatively, of a tip at the other end of the casing member comprising a threaded inner tube having a continuous inner surface affording a smooth guideway for the cable and an outer sleeve fixed thereto and constituting a finger grip from which the threaded portion of the tube projects to take attachment to a shutter casing.

2. In a shutter release, the combination with an outer flexible tubular casing and an inner flexible cable, both terminating at one end in finger-pieces, one member being incompressible and adapted to act as a thrust member against a shutter part and the other inextensible to take the reaction therefrom as the finger-pieces are moved relatively, and a covering on the casing, of a tip at the other end of the casing member comprising a threaded inner tube having a continuous inner surface affording a smooth guideway for the cable and an outer sleeve fixed thereto and constituting a finger grip from which the threaded portion of the tube projects to take attachment to a shutter casing, said sleeve also acting as a securing means for the casing cover.

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N° 13,157 A.D. 1905

Date of Application, 26th June, 1905

Complete Specification Left, 26th Jan., 1906—Accepted, 26th June, 1906

PROVISIONAL SPECIFICATION. AUG 14 1906

"Improvements in or relating to Flexible Mechanism for the Transmission of Power through Varying Directions and the Manufacture thereof".

We, CHARLES HENRY WATSON, of 313 High Holborn, London; Optician: and ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London; Engineer: do hereby declare the nature of this invention to be as follows:—

Heretofore mechanism has been employed for the purpose of transmitting motion or power in varying directions by means of two elements or members both of which must be flexible during operation and also such mechanism has been applied for releasing or operating photographic shutters see for example Bowden's Patent No. 25325 of 1896 Edwards Patents Nos. 12639 and 12812 both of 1901 and Edwards and Watson's Patents Nos. 5047 and 28792 both of 1903.

Now the present invention relates to mechanism for the transmission of power of the character wherein the outer of the two flexible members or elements is composed of a wire or wires spirally wound or coiled so as to form practically a tube or enclosing member within which the other member can slide.

Such power transmitting apparatus in some of its forms when employed for certain purposes such as for photographic shutter releases *etc.* is liable to unintentionally release the shutter should the apparatus get a pull or jerk accidentally owing to the fact that as heretofore constructed a certain amount of movement between the outer member can take place with respect to the inner member; and furthermore when the said outer member is made as heretofore of a closely coiled wire the coils of which are in contact throughout as heretofore this has the result that when the apparatus is flexed round a curve or curves (and especially when such curve is one of short radius) owing to the outer member being incompressible on the inside of the bend consequently the said outer member will necessarily expand or stretch or extend on the outer side of the bend with the further result that tension or a tendency to stretch is put upon the inner member or said inner member is caused to slide with respect to the outer member; and these drawbacks or objections this invention is designed (*inter alia*) to prevent or reduce.

A further object of this open coiling is to give the apparatus greater flexibility enabling it to be coiled up closely when not in use and to prevent stretching or damaging the outer cover or stocking or the inner member while being so coiled or while so coiled.

Now according to the present invention; the outer slidable member is made of a coiled wire or wires but the coils (though close) are not in actual contact when the apparatus is in its normal (unflexed) position but the coils are so spaced apart, formed, or arranged, that when the apparatus is flexed round a bend or curve of about the shortest radius for which the apparatus is designed or intended to be used, the coils will permit of their being compressed on the inside of the bend towards each other (until they touch) and this will consequently avoid stretching the outer member on the outer side of the bend or curve and thus obviate the aforesaid tendency to put tension on the inner member by the act of bending or flexing such apparatus and over this "open coiled" outer member and so as to act in conjunction therewith an additional and outermost cover or "stocking" is employed according to this invention which serves

furthermore to prevent any stretching movement relatively between the aforesaid inner member and the open coiled outer member; and thus prevents accidental release as aforesaid.

The aforesaid "open coiling" or specially proportioned coiling of the outer member according to the present invention may either be applied for the whole length of the outer member or only to a part or parts thereof as for example the outer member may be open coiled according to this invention only at the parts where it is liable to or required to be flexed while the retaining part or parts may be of any other suitable construction.

Furthermore at one or both ends of the coiled outer member—the wire may be opened out still more or so arranged as to serve as a coiled spring to keep the relative parts of the apparatus in their proper or normal position or restore same thereto.

Or in some cases the outer coiled member may be further opened out throughout its entire length, for instance, the apparatus may be so arranged that the inner member is operated by compression when the mechanism is operated while the outer "stocking" (which is inextensible) is put under the tension during such operation and the said further opened coiled member (attached to the inner member at a suitable point) serves—as a spring—to return said inner member to its original position.

Where necessary or desirable (for example where the flexible mechanism is of a considerable length) the outermost cover or stocking may advantageously be provided at any desired point or points with clips or binders such as circular rings or sleeves or short tubes which are crimped onto the aforesaid outer member or so attached thereto as to firmly hold and secure the said "stocking" or outermost cover in position on said outer member and thus prevent any relative longitudinal movement of these parts such as any tendency of the outermost cover to "creep".

In some cases the inner member (provided with the open-coiled outer member as aforesaid) may be located within an open coiled auxiliary cover (between the inner and outer member) which serves as a compression or tension spring to return the inner and outer members to their normal position relatively to one another.

Dated this 26th day of June 1905.

TONGUE & BIRKBECK,
Agents for the Applicants.

COMPLETE SPECIFICATION.

"Improvements in or relating to Flexible Mechanism for the Transmission of Power through Varying Directions and the Manufacture thereof".

We, CHARLES HENRY WATSON, of 313 High Holborn, London; Optician: and ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London; Engineer: do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

Heretofore mechanism has been employed for the purpose of transmitting motion or power in varying directions by means of two elements or members both of which are and must be flexible during operation see for example Bowden's British Patent No. 25325 of 1896 and Edwards' British Patent No. 12699 of 1901 and also such mechanism has been applied for releasing or

operating photographic shutters see Edwards' Patent No. 12812 of 1901 and Edwards & Watson's Patents Nos. 5047 and 28792 both of 1903.

Such power transmitting apparatus in some of its forms when employed for certain purposes such as for photographic shutter releases *etc.* is liable to unintentionally operate the part to which it is connected (for example unintentionally release the shutter) should the apparatus get a pull or jerk accidentally owing to the fact that as heretofore constructed a certain amount of movement of the outer member can take place with respect to the inner member; and furthermore when the said outer member is made as heretofore in some cases of a closely coiled wire the coils of which are in contact throughout this has the result that when the apparatus is flexed round a curve or curves (and especially when such curve is one of a short radius) owing to the outer member being incompressible on the inside of the bend consequently the said outer member will necessarily expand or stretch or extend on the outer side of the bend with the further result that tension or a tendency to stretch is put upon the inner member or said inner member is unintentionally caused to slide with respect to the outer member; and these drawbacks or objections this invention is designed (*inter alia*) to prevent or reduce.

We are aware that it has heretofore been proposed to employ an inner member or wire such as A with an open coiled outer member located within a rigid metal tube or non-flexible outermost covering and also we are aware that it has been proposed to employ an inner member or wire with an open-coiled outer member located within a sheath of rubber, gutta-percha or other suitable material, but none of these proposed constructions are the same as—or would answer the purpose of or accomplish the results obtained by—the present invention.

Now the present invention relates to mechanism of the aforesaid character for the transmission of power in varying directions wherein the outer of the two flexible members or elements is composed of a wire or wires spirally wound or coiled so as to form practically a tube or enclosing member which is incompressible crosswise (one or both of the said two members being adapted to slide upon or with respect to the other) and according to this invention the wire or wires forming such outer member is not only open coiled in the manner hereinafter more fully described but is also provided with an additional and outermost cover or stocking of textile material which is employed over said open coiled member this special additional or outermost cover being itself flexible and compressible transversely but inextensible lengthwise and thereby serves to prevent any stretching movement relatively between the aforesaid inner member and the open-coiled outer member.

According to the present invention; the said open coiled outer member of the two first-named members is made with the coils close together but not in actual contact when the apparatus is in its normal position (*i.e.* before flexing same), the coils being so spaced-apart, formed, or arranged, that when the apparatus is flexed round a bend or curve (of about the shortest radius for which the apparatus is designed or intended to be used) the coils will permit of their being pressed together until they touch or towards each other on the inside of the bend and this will consequently avoid stretching the outer member on the outer side of the bend or curve—and thus obviate the aforesaid tendency to put tension on the inner member by the act of bending or flexing such apparatus; and over this "open-coiled" outer member, and so as to act in conjunction therewith, the aforesaid additional and outermost cover or "stocking" of special construction is employed according to this invention which serves to prevent any stretching movement relatively between the aforesaid inner member and the open-coiled outer member; and thus prevents accidental release as aforesaid. while on the other hand the open-coiled member acts as a coiled spring under compression and tends to keep this outermost cover expanded or stretched to the limit of its extensibility; $\frac{\text{or}}{\text{and}}$ such outer cover may be kept in this stretched condition by means of a separate coiled spring inserted for this purpose if desired.

The aforesaid "open coiling" or specially proportioned coiling of the outer member according to the present invention may either be applied for the whole length of the outer member or only to a part or parts thereof as for example the outer member may be open-coiled according to this invention only at the parts where it is liable—or most required—to be flexed while the remaining part or parts may be of any other suitable construction.

Furthermore at one or both ends of the coiled outer member—the wire may be opened out still more or so arranged as to serve only at such end or end parts as a coiled spring to keep the relative parts of the apparatus in their proper or normal position or to restore same thereto.

Or in some cases for use with said flexible outermost stocking the outer coiled member may be further opened out throughout its entire length to serve as a spring to return said inner member to its original position and to maintain tension upon the stocking.

Where necessary or desirable (for example where the flexible mechanism is of a considerable length) the special outermost cover or stocking—which may be woven or laced or braided—may advantageously be provided at any desired point or points with clips or binders such as circular rings or sleeves or short tubes which are crimped onto the aforesaid outer members or so attached thereto as to firmly hold and secure the said special "stocking" or outermost cover in position on said outer member and thus prevent any relative longitudinal movement of these parts such as any tendency of the outermost cover to creep.

In some cases the inner member (provided with the open-coiled outer member as aforesaid) may be located within an open-coiled auxiliary cover (between the inner and outer members) which serves as a compression or tension spring to return the inner and outer members to their normal position relatively to one another.

Description of the Drawings.

Referring to the accompanying drawings:—

Fig. 1 is longitudinal sectional view of flexible mechanism in accordance with the present invention for the transmission of power in varying directions and Fig. 1ª is a local view on a greatly-enlarged scale of mechanism similar to Fig. 1 showing the operation of the open-coiled outer member when the mechanism is flexed.

Fig. 2 is longitudinal sectional view of a modified arrangement.

Fig. 3 is a similar view to Fig. 1 but showing the open-coiled outer member still further opened so as to act as a spring which will serve the dual purposes hereinafter described.

Referring now to Figs. 1 and 1ª of the drawings:—

In this arrangement the inner member A is attached to the sleeve A^2 by means of the cross-pin *a*. The outer member B is formed open-coiled as shown, one end thereof being inserted in the tubular end B^1 of the push-button B^2 while the other end B^3 of said open-coiled outer member is still further open-coiled so as to form a spring B^3 which latter acts against the head or collar A^1 fixed to the inner member A whereby said head end A^1 of the inner member is normally kept pressed outwardly to the limit of its movement by the push-button B^2 while when the sleeve A^2 is moved towards the push-button B^2 thereby tractive force is exerted upon the inner member A and the end A^1 is moved so as to compress the spring B^3 and is returned by the latter upon release of the buttons A^2 B^2.

It will readily be seen that when the inner and outer members A and B are flexed or bent round a curve the open coil will permit of this taking place without putting any strain upon the inner member A.

C is stocking or outermost cover of suitable textile material—advantageously a braided outer cover of fibrous material.

Z is collar or sleeve crimped over all so as to firmly lock and secure the braided outermost member C upon the coiled outer member B.

Referring now to Fig. 2:—

In this arrangement one end of the inner member A is attached to the push-button B^x while the outer member B at one end rests in a socket b^1 against the shoulder a^x in the sleeve A^x; while the other end of said outer member B is located in a fixed socket or sleeve D on the part or thing to be operated.

C is the outermost cover or stocking in this case formed of inextensible braided fibrous material which is fixedly secured at one end to the socket D and at the other end in the socket B^1.

E is an intermediate coiled spring inserted between the outer member B and the inner member A the latter being located within said interposed coiled spring which acts as a support or guide for said inner member A as well as acting as a spring which serves to keep and maintain the outermost cover C in a taut condition and also keeps the button normally pressed outwards.

It will thus readily be seen that upon the flange on the sleeve A^x on the button B^x being grasped and the button B^x pressed towards the flange thereby tractive force will be put upon the outermost cover C and as this is inextensible consequently pressure will be put upon the inner member A by the button B^x and thereby the inner member A will be forced along by the inward movement of the button B^x and consequently the spring E will be compressed and upon release of the button B^x will return the latter to its normal position as well as serving as guide for same as aforesaid—the outer member B which is open-coiled in accordance with this invention also serves the purpose of keeping the inextensible outer cover C taut as aforesaid.

Referring now to Fig. 3:

In this arrangement the inner member A is attached to the push-button A^{xx} which latter is pushed through the sleeve B^{xx} (*i.e.* in the direction of the inner member A) and thereby pressure is put upon the inner member A and the latter is operated by pressure in this case instead of by traction as in Fig. 1; but in this case (Fig. 3) the open-coiled outer member B is still further opened out throughout its entire length as illustrated (or this further opening out may be only for a part of its length if desired—as for example it may be still further opened for say a few inches at the end thereof adjoining the push button A^{xx}) and this open-coiled outer member B will then act as a spring which at one end will bear against the cramp Z which acts as a stop or shoulder which limits the expansion of said outer member B at this end—while at its other end said outer member B bears against the head or enlargement A^{xxx} on the push-button A^{xx} and thereby keeps said button A^{xx} normally pressed outwards and this enlargement A^{xxx} on its opposite side bears against the shoulder, B^{xx} on the sleeve B^{xx} and thereby tends to normally keep both the push-button A^{xx} and sleeve B^{xx} pressed in a direction away from the other end or cramp Z; such outward movement of these parts however being limited by the inextensible stocking C which is securely fastened at each end to said outer member, or as illustrated said stocking C may be secured at one end to and by the cramp Z and at the other end secured to the sleeve B^{xx} by the ring C^x cramped on the said sleeve B^{xx}.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:—

1. Flexible mechanism for the transmission of power in varying directions wherein the outer member, consisting of a coiled wire (or wires) such as B which encloses the inner member such as A) is formed wholly or mainly with said coils other than touching one another on the abutting faces thereof when the mechanism is in its normal position (*i.e.* when not flexed round a curve or curves) in combination and arranged to act in conjunction with an inextensible flexible stocking such as C of textile material, substantially as and for the purposes hereinbefore described.

2. In flexible mechanism for the transmission of power in varying directions of the character described, the employment of a coiled spring such as E (Fig. 2) interposed between the flexible inner member and the flexible outer member so as to serve the double purpose of acting as guide for the inner member and spring to restore the moving parts to their normal position which spring such as E may extend throughout the length of the flexible mechanism or only a part thereof in combination and arranged to act in conjunction with an inextensible flexible stocking such as C of textile material substantially in the manner and for the purposes hereinbefore described.

3. Flexible mechanism for the transmission of power in varying directions: comprising an inner and outer member (such as A and B) said outer member being incompressible cross-wise, and an inextensible-flexible outermost member such as C which is compressible lengthwise and crosswise and fitting over said outer member B, all the parts being constructed combined and arranged to act substantially in the manner and for the purposes hereinbefore described with reference to and as illustrated in Figs. 1 and 1ª, or Fig. 2, or Fig. 3 of the drawings hereunto annexed.

Dated this 26th day of January 1906

TONGUE & BIRKBECK,
Birkbeck Bank Chambers, Chancery Lane, London, W.C.
Agents for the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1906.

Fig. 1.

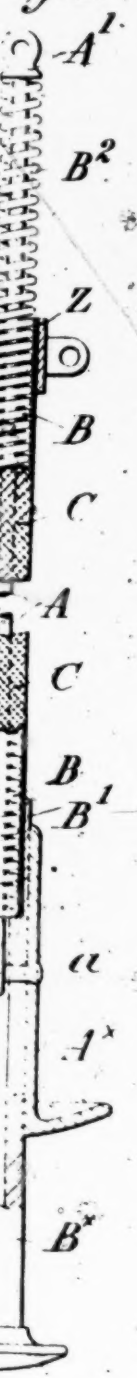


Fig. 2.

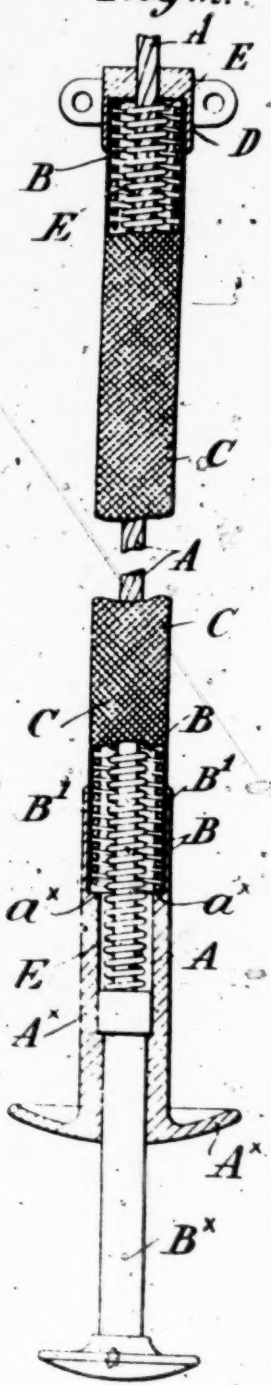


Fig. 3.

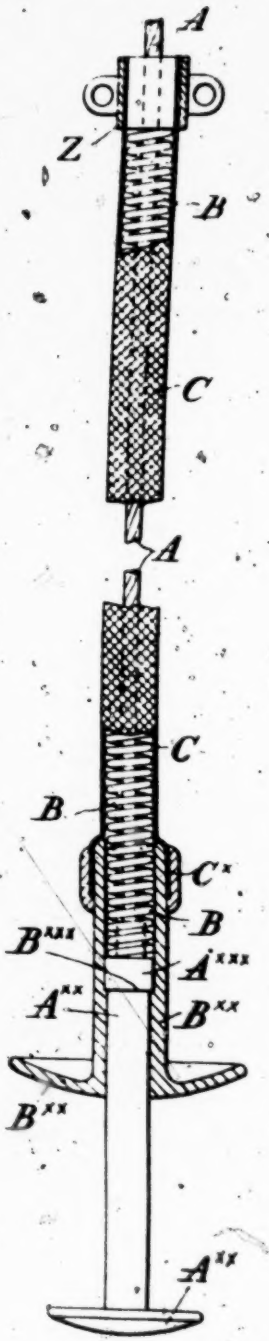
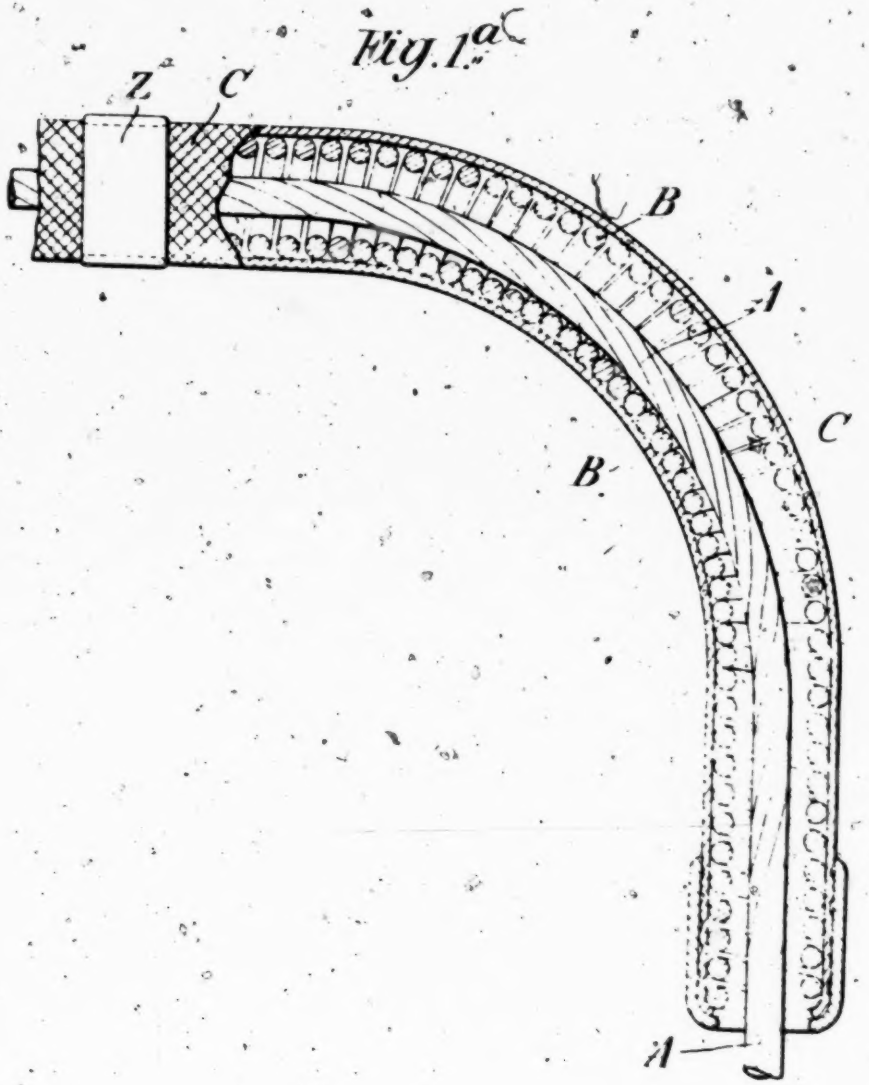


Fig. 1.ª



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Date of Application, 31st July, 1905

Complete Specification Left, 28th Feb., 1906—Accepted, 19th July, 1906

PROVISIONAL SPECIFICATION.

"Improvements in or relating to Apparatus or Mechanism for the Transmission of Power in Varying Directions."

We, ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London; Engineer; and CHARLES HENRY WATSON, of 313 High Holborn, London; Optician: do hereby declare the nature of this invention to be as follows:—

The object of this invention primarily is an improved power transmission apparatus especially suitable for photographic releases or other purposes where great flexibility is required.

According to one arrangement the outermost member is made of thread cord or wire advantageously plaited and *per se* is compressible lengthwise and may also even be compressible crosswise but inextensible lengthwise. One end of the said inextensible outermost member is passed over a sleeve or tube attached to a button or collar and is secured by any suitable means *e.g.* by a thimble, slid or cramped thereon; the other end of said outermost member is likewise secured to a second tube or sleeve carrying the means for attaching the apparatus in position such for example as a split thimble or similar attaching means which latter may if desired be loosely or otherwise jointed to the apparatus.

The innermost member may be formed of one or more wire or wires or of stranded wires or of wires held together by wire coiled round them or a closely coiled spiral and is attached at one end to a push button or push piece—for example passed at one end into the sleeve or shank thereof and there secured by compressing or denting said sleeve at one or more points—this push button or push piece being adapted to slide within or otherwise operate in conjunction with the first-named sleeve to which the outermost member is attached as aforesaid.

Between the said outermost and said innermost members a coiled spring or intermediate member is provided which presses against the end of or otherwise acts on the push piece or push button and thereby returns it to its normal position.

The said coiled spring or intermediate member is secured at the other or fixed end of the apparatus to the part or thing to be operated and in some cases may extend closely coiled beyond such point of its attachment as for example to form a guide for the said innermost member.

Means are provided on or in conjunction with the push piece (such as an enlargement on the sleeve) to prevent the said sleeve on said push piece being pushed back too far. Or this enlargement may be dispensed with and the same result obtained by attaching a bead or beads to the inner member or by other suitable means.

According to a modification the coiled spring or intermediate member between the innermost and outermost members serves to keep the outer member extended and a closely coiled extension on said coiled spring is attached to the innermost member so that the said extension will act as a check spring to return the innermost member to normal position.

[*Price* 8*d.*]

In another modification I may use a coiled spring, beads, or the like, between the innermost and outermost members merely as a guide for the inner member; or I may even dispense with said spring or beads altogether and any suitable spring at the fixed end being provided to return the innermost member to normal position—an enlargement being provided on the sleeve of the push-piece as before described.

In another arrangement the outer member is secured to the button or collar aforesaid while the push button or push piece is secured to both the innermost and outermost members so that when they are moved towards one another that part of the outermost member between said buttons will bunch up or compress and thereby allow movement with respect to each other to take place, a suitable spring being provided to keep the apparatus extended as before or the aforesaid "open coiled" spring or intermediate member may be arranged to act as aforesaid.

In applying this invention to operate photographic shutters of the character known as roller blind shutters such as the Thornton-Pickard type the innermost member may be arranged to push the lever (usually operated by pneumatic bulb) by means of a bell-crank-like lever.

Or the end of the innermost member may be formed spherical or provided with a ball or spherical part or the like adapted to engage in a cup or socket in the underside of a horizontally pivoted arm said pivoted arm or a nut or extension thereon being thus caused to release or otherwise engage the shutter releasing lever or shutter operating lever.

Or when used with the Unicum type of shutter the pneumatic cylinder may be removed and an attachment provided to hold one end of the outermost member. The innermost member being attached to the lever usually operated by the pneumatic cylinder or the inner projection of the finger trigger. A clip is provided, so that the release may be coiled round the shutter and the free end thereof held in said clip when not in use.

A simple and effective construction or arrangement and attachment to diaphragm shutters of the type known as automatic diaphragm shutters or Unicum shutters or the like consists according to this invention in attaching the end of the outermost member in a clip which may either be a spring clip or clamp or vice arrangement or the like so that such end is firmly and fixedly held while leaving the innermost member free to be forced through same by pressure the end of said member when thus acted on by pressure actuating the releasing lever or shutter operating lever to which it is attached direct as for example by means of a pivot pin the eye of which is pivoted to the shutter operating lever while the shank of said pin passes through a fixed guide which may advantageously be carried on the same mount which supports the clip or clamp to which the outermost member is secured as aforesaid the said mount also being provided if desired with a clip or device in which the outermost end of the "release" may be secured or in which same may rest when out of use: or this clip may be formed on other forms of releases.

According to another part of the present invention we may form the appliance or means for operating the aforesaid or any other apparatus for the transmission of power in various directions as follows:—

The shank of the push button or push piece is provided with a prolonged slot extending to or towards the free or inner end of said shank and the innermost member of the flexible transmission appliance is attached to a plate or device advantageously a flat stamping of rectangular form one arm of which extends up the interior of said shank or sleeve a spring being interposed between same and the end or push button itself to normally keep said device pressed outwards, while a part of the device which extends through the longitudinal slot and engages with and is secured to another sleeve provided with a collar or the like which latter sleeve slides freely on said shank of said push piece or push button which latter at its inner end is attached to the outer member

of the flexible transmission apparatus (for example by being cramped on to it either with or without an outer collar and provided with an inset or interior ridge above and below the collar on the end of the outer member—or it may be screwed and provided with a union or screwed socket) or if more than two members are employed then to the outermost member of said transmission apparatus.

A pawl may be provided on the outer sleeve or attached to the outer projection of the said stamping or to the sliding sleeve itself which will engage in notches in the push button shank when it is desired to keep the push button and the collar on the outer sleeve together or it can be thrown out of action when desired. This result may also be obtained by a jamming lever attached in the same way and cramping the outer sleeve and push button shank together.

It will thus readily be seen that when this apparatus is used in conjunction with an incompressible outer member or inextensible outermost member (or both) upon forcing the sleeve towards the said push button or head of the push piece thereby traction is put upon the innermost member (or wire) and the part to be actuated by the other end of the latter is thereby operated.

According to another modification the sleeve provided with the collar through which the push button or push piece slides as aforesaid may be provided with an interior annular ridge or ridges or other inset or insets to form an internal ledge or ledges or shoulder or shoulders *etc.* towards each end of said sleeve so as to thereby afford a bearing to the shank of the push piece and act as stop or limit the outward movement of said push piece the inner end of the shank of which latter may be enlarged or provided with an enlargement or head or other means adapted to engage the said inset or interior ridge *etc.* and similarly towards the other end of said sleeve (with collar thereon) same is provided with similar interior annular ridge or ridges or other inset or insets or the like that will serve to grip or hold the outermost member (or outer member if only two members are employed in the transmission apparatus) and the spring or winding forming the intermediate member may if desired be open coiled in accordance with our Application for Patent dated 26th June 1905 No. 13157; or and the end of said coiled intermediate member may be extended as a spring between the push piece and the outermost member or a separate spring may be inserted to normally keep the push piece or push button and the sleeve with collar held apart from one another.

Dated this 31st day of July 1905.

TONGUE & BIRKBECK,
Agents for the Applicants.

COMPLETE SPECIFICATION.

"Improvements in or relating to Apparatus or Mechanism for the Transmission of Power in Varying Directions"

We, ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London; Engineer: and CHARLES HENRY WATSON, of 313 High Holborn, London; Optician: do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

The object of this invention primarily is an improved power transmission apparatus especially suitable for photographic releases or other purposes where great flexibility is required.

According to one arrangement the outermost member is made of thread cord or wire advantageously braided or plaited and *per se* is inextensible lengthwise but is or may be compressible lengthwise and may also be compressible crosswise. One end of the said inextensible outermost member is passed over a sleeve or tube attached to a button or collar and is secured thereto by a thimble, slid or cramped thereon; the other end of said outermost member is similarly secured to another tube or sleeve carrying the means for attaching the apparatus in position such for example as a split thimble or similar attaching means which latter may if desired be loosely or otherwise jointed to the apparatus.

The innermost member may be formed of one or more wire or wires or of stranded wires or of wires held together by a wire coiled round them or a closely coiled spiral and is attached at one end to a push button or push piece—for example passed at one end into the sleeve or shank of said push button & there secured by compressing or denting said sleeve at one or more points—this push button or push piece being adapted to slide within or otherwise operate in conjunction with the first-named sleeve to which the outermost member is attached as aforesaid.

Between the said outermost and said innermost members a coiled spring or intermediate member is provided which presses against the end of or otherwise acts on the push piece of push button and thereby returns it to its normal position.

The said coiled spring or intermediate member is secured at the other or fixed end of the apparatus either directly or indirectly to the part or thing to be operated or otherwise suitably secured and in some cases may extend closely coiled beyond such point of its attachment as for example to form a guide for the said innermost member.

Means are provided on or in conjunction with the push piece (such as an enlargement on the sleeve) to prevent the said sleeve on said push piece being pushed back too far. Or this enlargement may be dispensed with and the same result obtained by attaching a bead or beads to the inner member or by other suitable means.

According to a modification the coiled spring or intermediate member between the innermost and outermost members serves to keep the outer member extended and a closely coiled extension on said coiled spring is attached to the innermost member so that the said extension will act as a check spring to return the innermost member to normal position.

In another modification we may use a coiled spring, beads, or the like, between the innermost and outermost members merely as a guide for the inner member; or we may dispense with said spring or beads altogether and provide any suitable spring at the fixed end to return the innermost member to normal position—an enlargement being provided on the sleeve of the push-piece as before described.

In another arrangement the outer member is secured to the button or collar aforesaid while the push-button or push-piece is secured to both the innermost and outermost members so that when they are moved towards one another that part of the outermost member between said buttons will bunch up or compress and thereby allow movement (of the push-pieces) with respect to each other to take place, a suitable spring being provided to keep the apparatus extended as before or the aforesaid "open coiled" spring or intermediate member may be arranged to act as aforesaid.

In applying this invention to operate photographic shutters of the character known as roller blind shutters such as the Thornton-Pickard type the innermost member may be arranged to push the lever (usually operated by pneumatic bulb) by means of a bell-crank-like lever.

Or the end of the innermost member may be formed spherical or provided with a ball or spherical part or the like adapted to engage in a cup or socket in the underside of a horizontally pivoted arm said pivoted arm or a nut or

extension thereon being thus caused to release or otherwise engage the shutter releasing lever or shutter operating lever.

Or when used with the Unicum type of shutter the pneumatic cylinder may be removed and an attachment provided to hold one end of the outermost member. The innermost member being attached to the lever usually operated by the pneumatic cylinder or the inner projection of the finger trigger. A clip is provided, so that the release may be coiled round the shutter and the free end thereof held in said clip when not in use.

A simple and effective construction or arrangement and attachment to diaphragm shutters of the type known as automatic diaphragm shutters or Unicum shutters or the like consists according to this invention in attaching the end of the outermost member in a clip which may either be a spring clip or clamp or vice arrangement or the like so that such end is firmly and fixedly held while leaving the innermost member free to be forced through same by pressure the end of said member when thus acted on by pressure actuating the releasing lever or shutter operating lever to which it is attached direct as for example by means of a pivot pin the eye of which is pivoted to the shutter operating lever while the shank of said pin passes through a fixed guide which may advantageously be carried on the same mount which supports the clip or clamp to which the outermost member is secured as aforesaid the said mount also being provided if desired with a clip or device in which the outermost end of the "release" may be secured or in which same may rest when out of use.

According to another modification the sleeve provided with the collar through which the push button or push-piece slides as aforesaid may be provided with an interior annular ridge or ridges or other inset or insets to form an internal ledge or ledges or shoulder or shoulders *etc.* towards each end of said sleeve so as to thereby afford a bearing to the shank of the push-piece and act as stop or limit the outward movement of said push-piece the inner end of the shank of which latter may be enlarged or provided with an enlargement or head or other means adapted to engage the said inset or interior ridge *etc.* and similarly towards the other end of said sleeve (with collar thereon) same is provided with similar interior annular ridge or ridges or other inset or insets or the like that will serve to grip or hold the outermost member (or outer member if only two members are employed in the transmission apparatus) and the spring or winding forming the intermediate member may if desired be open coiled in accordance with our Application for Patent dated 26th June 1905 No. 13157; or and the end of said coiled intermediate member may be extended as a spring between the push-piece and the outermost member or a separate spring may be inserted to normally keep the push-piece or push-button and the sleeve with collar held apart from one another.

According to another part of the present invention we may form the appliance or means for operating the aforesaid or any other apparatus for the transmission of power in various directions as follows:—

The shank of the push-button or push-piece is provided with a prolonged slot extending to or towards the free or inner end of said shank and the innermost member of the flexible transmission appliance is attached to a plate or device advantageously a flat stamping of rectangular form one arm of which extends up the interior of said shank or sleeve a spring being interposed between same and the end or push-button itself to normally keep said device pressed outwards, while a part of the aforesaid plate or device extends through the longitudinal slot and engages with and is secured to another sleeve provided with a collar or the like which latter sleeve slides freely on said shank of said push-piece or push-button which latter at its inner end is attached to the outer member of the flexible transmission apparatus (for example by being cramped on to it either with or without an outer collar and provided with an inset or interior

ridge above and below the collar on the end of the outer member—or it may be screwed and provided with a union or screwed socket) or if more than two members are employed then to the outermost member of said transmission apparatus.

A pawl may be provided on the outer sleeve or attached to the outer projection of the said plate or stamping or to the sliding sleeve itself which will engage in notches in the push button shank when it is desired to keep the push button and the collar on the outer sleeve together or it can be thrown out of action when desired. This result may also be obtained by a jambing lever attached in the same way and cramping the outer sleeve and push button shank together.

It will thus readily be seen that when this apparatus is used in conjunction with an incompressible outer member or inextensible outermost member (or both) upon forcing the sleeve towards the said push button or head of the push-piece thereby traction is put upon the innermost member (or wire) and the part to be actuated by the other end of the latter is thereby operated.

In the accompanying drawings we have illustrated various alternative forms of mechanism according to the present invention for the transmission of power in varying directions.

Referring to Figs. 1 to 3:—

a is the innermost member which is inextensible and incompressible.

b is the coiled spring or intermediate member which is incompressible crosswise but is extensible and compressible lengthwise.

c is the outermost member which is so formed (for example of braid) as to be inextensible lengthwise but is or may be compressible lengthwise $\frac{\text{or}}{\text{and}}$ crosswise; and which outermost member we will refer to as the "stocking".

The innermost member *a* is attached at one end to the shank d^1 of the push button *d* which shank d^1 at its inner end is provided with a flange d^2 which limits the outward movement of said push button *d* by engaging the annular ledge or shoulder e^3 formed internally in the sleeve e^1 provided with the external flange *e* which latter is adapted to be grasped by the fingers of the person operating the push button *d*.

The end of the coiled spring *b* bears on the flange d^2 Fig. 1 (in Fig. 2 said coiled spring bears against a washer d^3 which is used in place of said flange d^2 Fig. 1 which washer d^3 may be loose in which case a collar a^1 is cramped on the innermost member *a* as shown in Fig. 2) and consequently tends to keep the push button *d* pressed outwards and thereby also tends to keep the outermost member or stocking *c* stretched to the extreme limit of its length *i.e.* so as to keep it taut.

In Fig. 3 the coiled spring *b* bears directly against the internal ledge e^3 of the sleeve e^1 and in other respects acts the same as in Figs. 1 and 2.

In all the arrangements shown in Figs. 1, 2, and 3, one end of the stocking *c* is passed over the sleeve e^1 and secured by a thimble or collar *f* fitting thereover tightly onto the said sleeve *e*.

This thimble *f* may be cramped onto the sleeve e^1 or *vice-versa* or said sleeve and thimble may be otherwise securely fixed to one another so as to securely and permanently fix the said end of the stocking in between same; or instead of cramping together said thimble *f* and sleeve e^1 they may be arranged to secure the end of the stocking between them as follows:—

The thimble *f* $\frac{\text{or}}{\text{and}}$ the sleeve e^1 may be made tapering or partly tapering and of such relative sizes in bore and external diameter respectively that when the stocking end has been passed over the sleeve it will be possible to slide or force the thimble thereover but same will make such a tight fit and so compress the stocking end between them that none of the parts will afterwards separate; or as an extra precaution or for greater security one or both ends of the thimble may be slightly turned inwards $\frac{\text{or}}{\text{and}}$ provided with a serrated edge or

teeth or the like at the end which will engage in or with the stocking and obviate all possibility of the thimble coming off; or and if desired the exterior of the sleeve e^1 (where the end of the stocking is passed over same) may be corrugated ridged or roughened to further assist in holding these parts together.

At or towards the opposite end of the mechanism the other end of the outermost member or stocking c is similarly secured as aforesaid by a thimble or collar q fitting tightly thereover onto the sleeve h which is provided with spring arms or prongs i for attaching the mechanism to the thing to be operated such as to the ordinary pneumatic release mechanism on a photographic shutter.

In Fig. 1 the coiled spring b has the collar q cramped thereon and beyond this point extends freely through the said sleeve or mount but in Figs. 2 and Fig. 3 the sleeve h is cramped tightly onto the coiled spring b while in Fig. 3 said coiled spring b is secured onto the innermost member a by a short sleeve or collar k which cramps the said spring b onto said member a—in which case the coiled spring b will tend at both ends of the innermost member a to press or return the latter in the direction of the push-button d.

In all cases the intermediate member b is shown "open coiled" so as to freely permit of the mechanism being bent or flexed without putting any undue strain on the innermost member—as set forth in our Patent Application No. 13157 of 1905.

Referring now to Fig. 4;

In this figure we have shown similar mechanism to Fig. 2 except that the intermediate member b is not an open coiled spring and is not arranged at its end to act as a coiled spring and is not clamped to the sleeve e^1; the spring m to act on the innermost member a (to tend to keep the push-button d pressed outwards and to keep the stocking c in a taut condition) being provided in this case on the lever l which controls the thing to be operated such as a photographic shutter (not shewn) which lever l has the inner member a attached to it, and is provided with the spring m such as shown which tends to normally force the inner member a towards the push-button d.

Referring now to Fig. 5:—

In this case the outermost member or stocking c instead of terminating at the sleeve e^1 extends beyond said sleeve and is secured by the collar or thimble f which in this case (in a similar manner as aforesaid) secures the end of the stocking to the shank of the push-button d instead of to the sleeve e^1, and in the case illustrated in Fig. 5 the stocking is also secured at a separate point between the sleeve e^1 and the collar n—the stocking c being thus secured at this point between n and d^1 as well as secured by the thimble f; and that part of the stocking c^2 which lies between these two points of attachment, while free to be compressed when the button d is pushed inwards, will on the other hand serve to limit the outward movement of said push-button d, and the open coiled spring b consequently serving through the stocking part c^2 to keep the stocking c taut throughout its length.

Fig. 6 illustrates the application of the release mechanism constructed in accordance with the present invention to the well-known type of roller blind shutters having the thimble f by which the stocking c is secured to the mount o on an extension o^1 of which there is hinged the angle-piece p one arm p^1 of which passes behind the arm q of the releasing lever of the well-known pattern employed on roller blind shutters.

—Thus when pressure is applied by means of the inner member a to the angle-piece p thereby the lever q is operated and the shutter released.

Referring now to Fig. 7:—

In this arrangement one end of the stocking c is cramped by means of the collar n on to the open coiled spring b and then the sleeve e^1 is cramped onto or otherwise secured to said collar n said sleeve e^1 being provided with an

enlarged portion e^2 so as to permit the flanged end d^2 on the shank d^1 of the push-button d to slide up and down therein.

The open coiled spring b acting as before described to normally keep the push-button d forced outwardly & keep the stocking c taut; the other end of said stocking c being secured by the thimble f as aforesaid—to the sleeve h carrying the prongs i for attachment of the mechanism as aforesaid, said sleeve h being cramped to the open coiled wire b as aforesaid.

In Fig 8: The stocking c is secured between the sleeve e^1 and the collar n as in Fig. 5 by cramping the sleeve e^1 on to said collar n with the stocking thereinbetween; but in this arrangement the stocking is not extended below the sleeve e^1 and furthermore the coiled spring b is dispensed with in this part of the mechanism: the other end of the stocking is secured as before described by the thimble f on the sleeve h which latter moreover is cramped on to the coiled spring b^2 which at its upper end is securely attached to the inner member a as for example by cramping said spring on to the outermost part of the inner member a by means of a cap a^{22}.

This spring b^2 will thus serve to keep the inner member a normally pressed towards the push-button d and consequently will normally keep the stocking c in a taut condition.

In all the arrangements illustrated it will thus be seen that the outermost member or stocking c is very readily attached and is kept in a taut condition so that the release mechanism can act by pressure and not by traction.

Referring now to Fig. 9:—

In this arrangement the release mechanism is shown fitted to a shutter of the type known as self-setting or automatic shutters; an open coiled spring b being employed as in Figs. 1 to 7 and the end of the stocking c in this case is passed inside the sleeve h which is split towards the end where it receives the stocking c and after the latter has been passed inside it said end of the sleeve h is cramped on to the coiled wire b so as to thereby securely attach its end to the stocking c.

The sleeve h in this case is carried on a mount s which is screwed to the framework of the shutter a spring clip (for holding the other end of the release when out of use) being formed by the jaws s^1 which may advantageously be turned up out of the substance of the mount s.

Referring now to Figs. 10 to 17 which illustrate the invention as applied for producing traction of the innermost member a (instead of pressure as in Figs. 1 to 9) and also show clutches or devices for locking the operating parts together in any desired position:—

In Figs. 10 and 11: The innermost member a is attached to the plate or device 1 which is provided with a nose 2 adapted to pass through the slot 3 in the shank or sleeve e^1 provided with a flange e this plate or device 1 which may advantageously be a flat stamping and may be also provided with an arm or extension 4 adapted to pass within the coiled spring 5 located within the sleeve d^1 of the button d by means of which the said button d and flange e are kept normally pressed apart.

In Fig. 11 the push-button d d^1 is shown detached from the other parts which are combined together by passing the shank d^1 through the sleeve e^1 and then cramping the end of said shank d^1 on to the collar 6 between which latter and the coiled wire b the stocking c is secured namely by cramping the said collar 6 on to the coiled wire b with the stocking thereinbetween see Fig. 10.

The shank d^1 of the push-piece d is provided with the prolonged slot 7 to enable same to slide past the nose 2 of the flat stamping 1.

In Fig. 12:—A clutch or gripping device is shown for locking the shank of the push-piece d^1 to the sleeve e^1 namely the nose 2 of the plate 1 is extended to a short distance outside the sleeve e^1 and has pivoted thereto at 8 the cam-piece or locking device 9 the cam part 10 of which rides up against the plate or bridge-piece 11 the turned down ends of which pass through the sleeve e^1

and bear against the shank d^1 and force the latter against the opposite side of the interior of the sleeve e^1 so as to thereby lock the two parts d^1 e^1 together in suchwise as to prevent relative longitudinal movement and thus the inner member *a* can be held and locked in any desired position as for example when the shutter is in mid-position *i.e.* fully open to give a prolonged exposure.

Fig. 12 also shows another way of attaching the operating device to the flexible stocking namely the latter is secured between the collar 6 and the coiled wire *b* by cramping same together as in Fig. 10 a loose narrow collar 12 being inserted between this cramp on the collar 6 and an annular inset 13 formed in the shank d^1 of the push-piece *d* the end of said shank d^1 being passed over said collars 12 and 6 and the internally screwed collar 14 provided with a shoulder 15 is then screwed on to the externally screw-threaded end of said shank d^1 until the shoulder 15 meets said end and thus these parts are all securely attached together.

In Fig. 13 the clutch or gripping device 16 is pivoted at 17 to the extension of the nose 2 on the plate 1 and acts against a bridge-piece 18 fixed on the sleeve e^1 so as to thereby force the shank d^1 towards the clutch device or gripping device instead of forcing same away therefrom as in Fig. 12.

The attachment of the shank d^1 to the stocking *c* is similar to the arrangement shown in Fig. 10.

In Fig. 14 an arrangement is shown in which the nose 2 of the flat stamping or plate 1 has pivoted thereto at 19 the bent lever 20, 21, the arm 20 of said lever being normally kept pressed outwards by the spring 22 whereby the bent end 21 of said lever is normally kept forced against the shank d^1 of the push-button *d* which passes through the sleeve e^1 as shown.

This arrangement permits the shank d^1 of the push-button *d* to be readily forced inwards through the sleeve e^1 in the direction of the arrow *z* but the relative return movement of the parts is prevented by said spring levers 20, 21, until the latter is disengaged from the shank d^1 by pressing on the end 20 of said lever.

In Fig. 15 the shank d^1 and the sleeve e^1 are locked together by forming the sleeve e^1 with one or more longitudinal slots 23 and providing an internally tapered and screw-threaded collar 24 to screw on said sleeve e^1 so that by screwing up this tapered collar 24 it will compress the split end of said sleeve e^1 to the shank d^1 to thereby firmly lock the two together; a modified form of this arrangement being shown in Fig. 16 (of which Fig. 17 is an end view on line 17—17—Fig. 16) wherein a split collar 25 is mounted between the fixed collars 26 on the split sleeve e^1 and to the ends of said split collar 25 is pivoted at 27 the clutch or locking lever 28 the nose 29 of which serves to draw up said split collar 25 and compress the split end e^1 of the sleeve so as to thereby grip and lock the shank d^1 of the push-piece *d*.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:—

1. In mechanism for the transmission of power in varying directions wherein the inner flexible member is incompressible and is adapted to slide within an outer flexible member which is inextensible the herein described method of securing the said flexible outer member or "stocking" (such as *c*) to the other parts of the mechanism, which consists in passing the end of said stocking over a sleeve on the part to which it is to be attached and then sliding a thimble over said stocking and sleeve so as to thereby firmly secure said stocking between the thimble and sleeve—either with or without cramping the thimble and sleeve together, with the other parts of said mechanism all mounted and secured together, substantially as and for the purposes set forth.

2. Constructing flexible mechanism for the transmission of power in varying directions in accordance with Claim 1, with an open coiled spring interposed

between the said "stocking" (such as *g*) and the said inner member (such as *a*) substantially as and for the purposes hereinbefore described.

3. The improved mechanism for the transmission of power in varying directions arranged and constructed as specified with the outermost member or stocking such as *g* secured to the part to which it is to be attached by passing said stocking over a sleeve such as e^1 or *h* and then sliding a thimble such as *f* over said stocking and sleeve so as to firmly secure the stocking between said thimble and sleeve—either with or without cramping said thimble onto said sleeve—and the other parts of the mechanism all mounted combined and arranged to operate substantially as and for the purposes hereinbefore described with reference to and as illustrated in the respective Figs. 1 to 9 of the drawings hereunto annexed.

4. In flexible mechanism for the transmission of power in varying directions wherein the flexible inner member is inextensible and adapted to slide within the outer member (or members) which is incompressible; the attachment of the inner member such as *a* to, and the employent of, a plate or device such as 1 located in the sleeve such as e^1, a push-piece such as *d* with shank d^1 adapted to slide through said sleeve such as e^1, a prolonged slot such as 7 in said shank d^1, and a nose or projection such as 2 on said plate or device such as 1 adapted to pass freely through said prolonged slot 7 in the shank d^1 into engagement with the sleeve e^1 either with or without an extension or arm 4 on said device 1 and a spring such as 5 held under compression in the shank d^1 substantially as and for the purposes hereinbefore described.

5. In flexible mechanism for the transmission of power in varying directions wherein the flexible inner member is inextensible and adapted to slide within the outer member (or members) which is incompressible; the herein described means for attaching said inner member such as *a* to the operating mechanism substantially as hereinbefore described with reference to and as illustrated in Figs. 10 and 11 of the drawings hereunto annexed.

6. In flexible mechanism for the transmission of power in varying directions wherein the flexible inner member such as *a* is connected to the external sleeve e^1 by which latter said member is caused to operate (by traction) through the intervention of a plate or device such as 1, 2, as claimed in above Claim 4, the arrangement and use in combination therewith of a clutch or gripping device for locking the shank d^1 of the push-button such as *d* to the operating sleeve such as e^1, substantially as hereinbefore described with reference to and as illustrated in the respective Figs. 12 to 17 of the drawings hereunto annexed.

Dated this 28th day of February 1906.

TONGUE & BIRKBECK
Birkbeck Bank Chambers, Chancery Lane, London, W.C.
Agents for the Applicants

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SHEET 1

Fig.1.

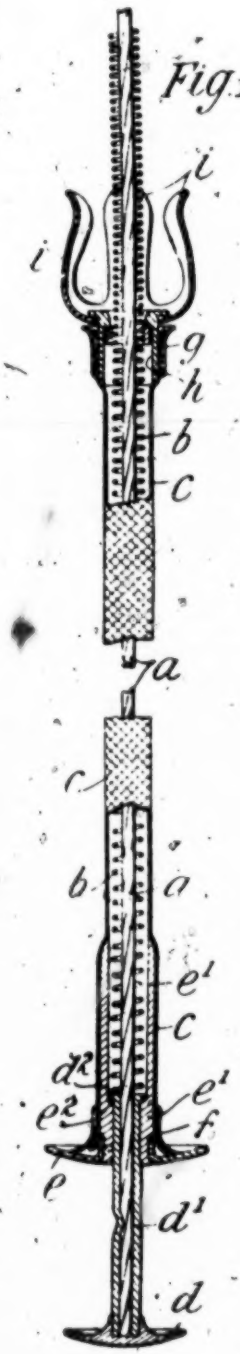


Fig.2.

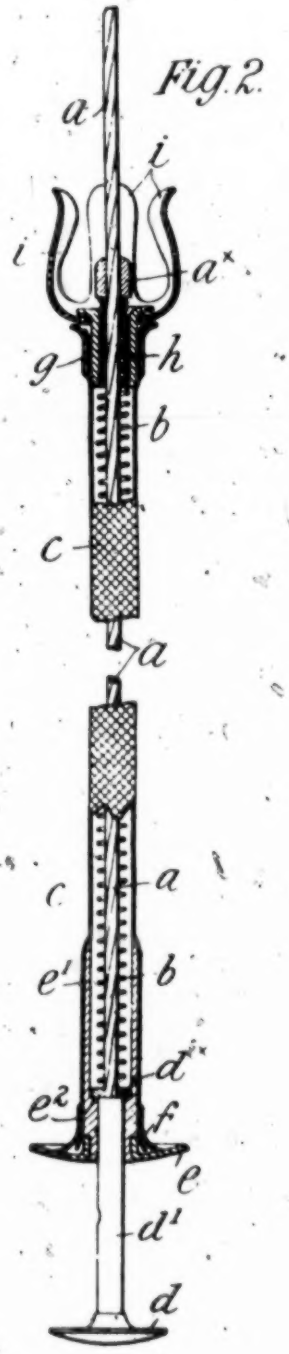
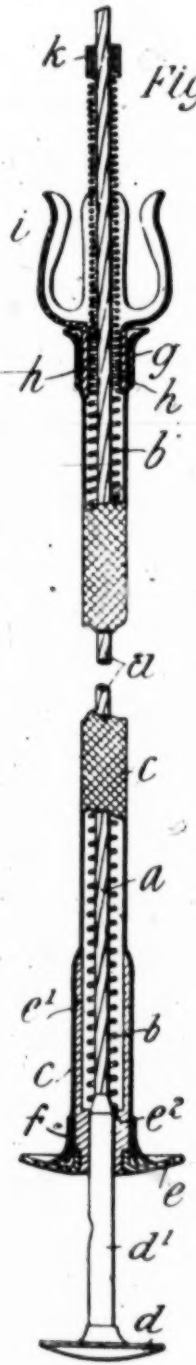


Fig.



SHEET 2

Fig.4.

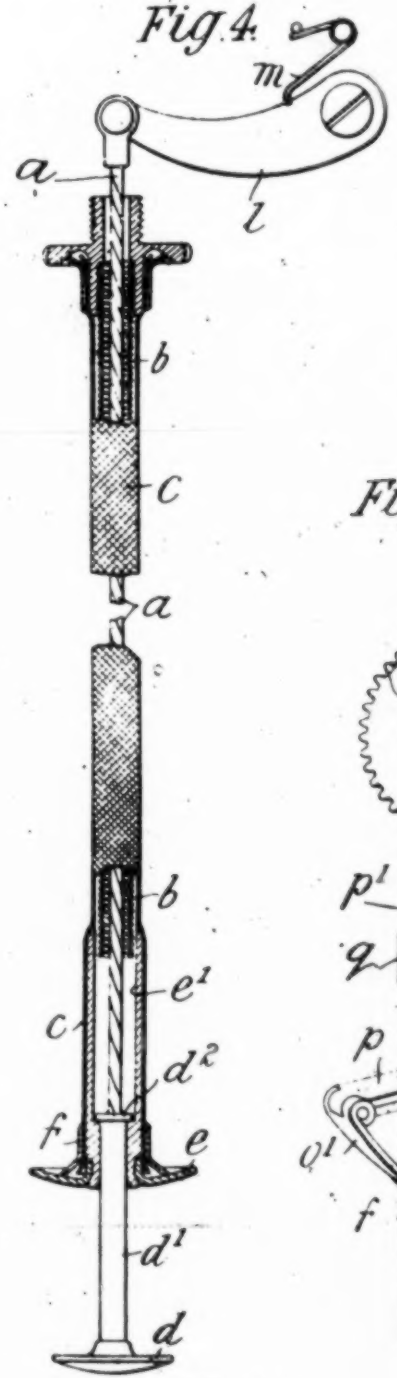


Fig.5.

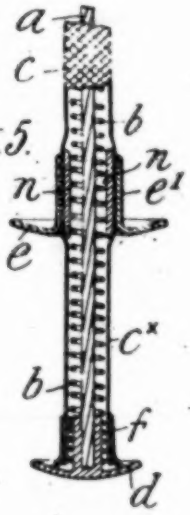


Fig.6.

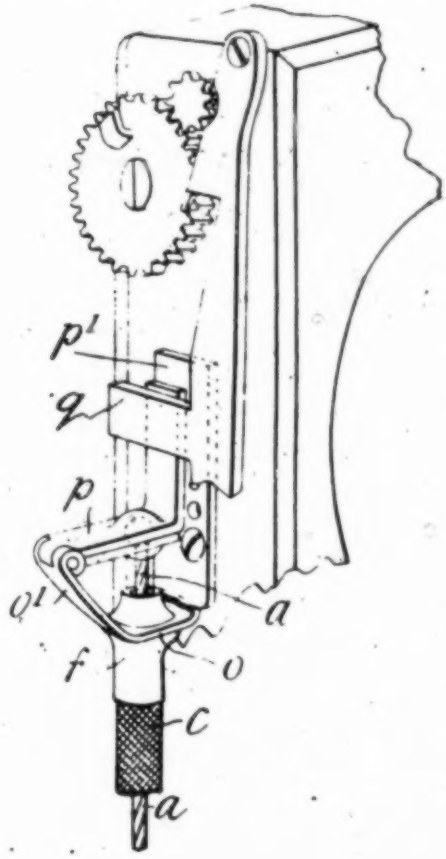


Fig.7.

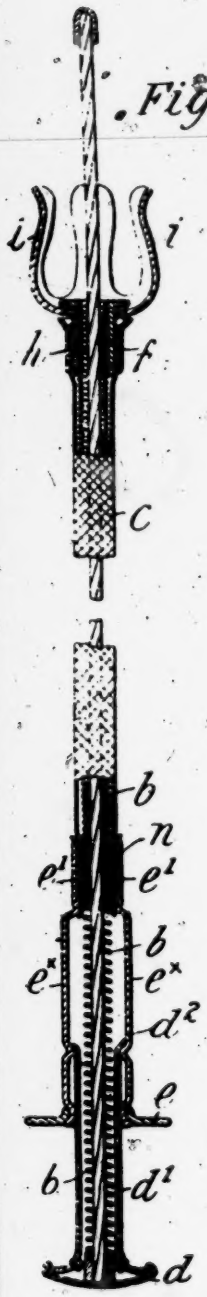


Fig.8.

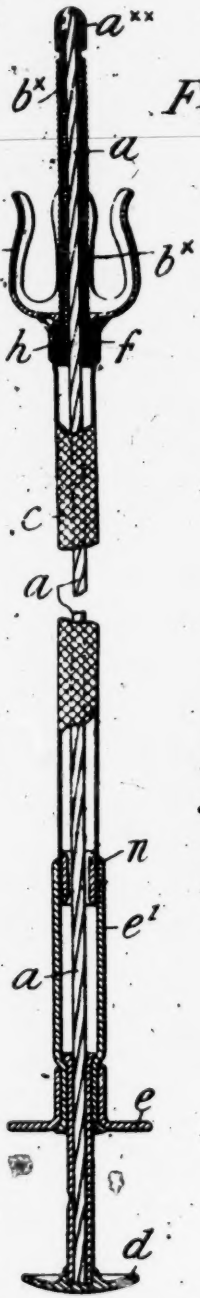


Fig.9.

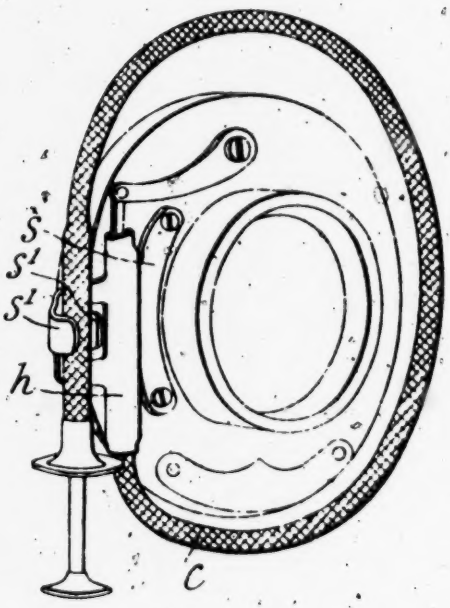


Fig. 10.

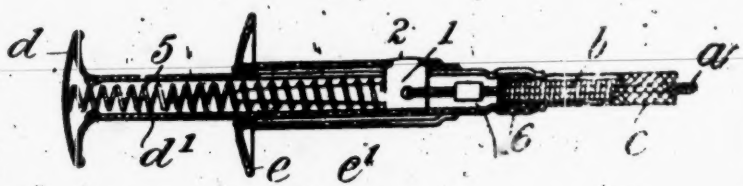


Fig. 11.

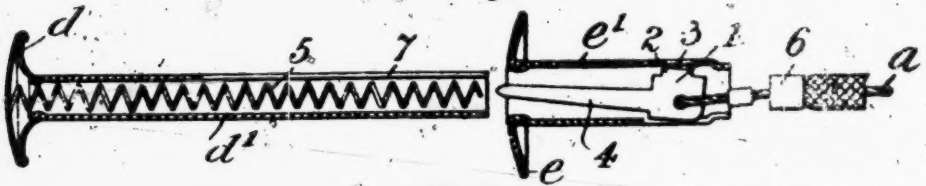


Fig. 12.

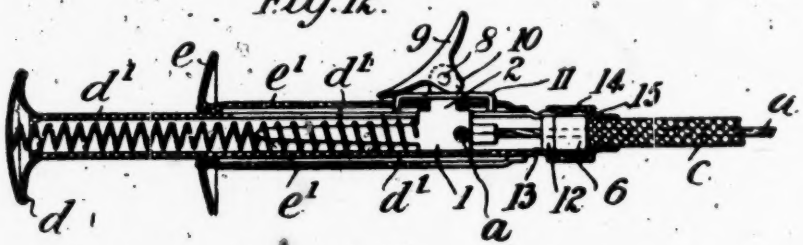
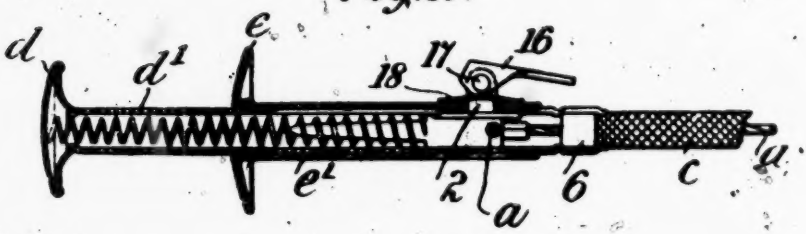


Fig. 13.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 14.

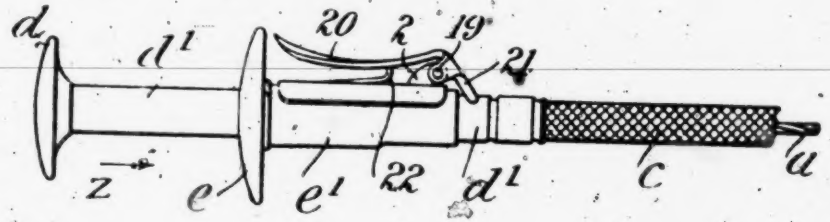


Fig. 15.

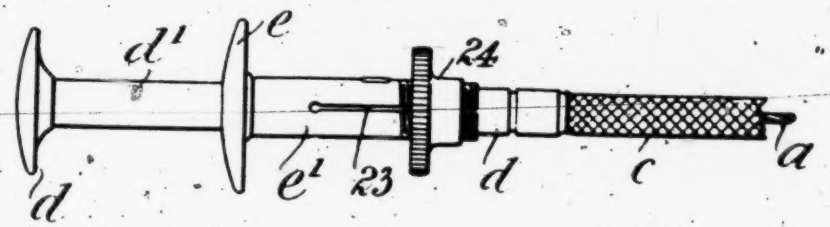


Fig. 16.

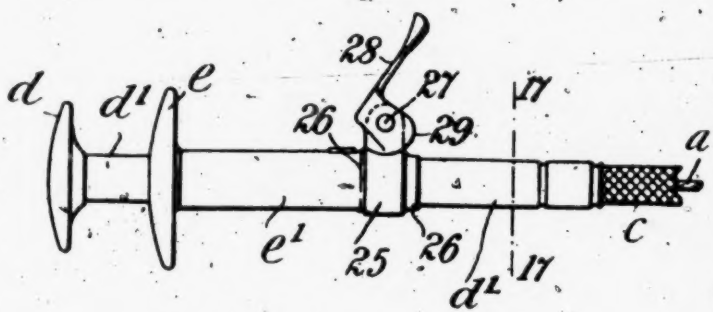
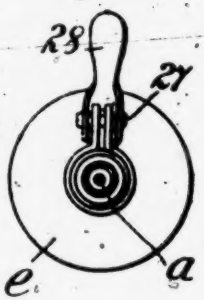


Fig. 17.



Malby & Sons, Photo-Litho

N° 5741. A.D. 1906

Date of Application, 9th Mar., 1906

Complete Specification Left, 10th Sept., 1906—Accepted, 7th Mar., 1907

PROVISIONAL SPECIFICATION.

"Improvements in or relating to Apparatus or Mechanism for the Transmission of Power in Varying Directions".

We, ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London, Engineer: and CHARLES HENRY WATSON, of 313 High Holborn, London, Optician: do hereby declare the nature of this invention to be as follows:—

This invention relates to apparatus or mechanism for the transmission of power in varying directions.

Apparatus or mechanism for the transmission of power in varying directions is well-known comprising two or more members one of which is slidable longitudinally upon or in or with respect to the other or others and such mechanism has among other uses been specially constructed and arranged as the "release" or means for operating (*i.e.* either opening or closing or releasing) photographic shutters see for example Edwards' Patents Nos. 12659 and 12813 both of 1901 and Edwards & Watsons' Patents Nos. 5047 and 28792 of 1903; and Nos. 13157 and 15645 both of 1905 and also see Bowden's Patent No. 25326 of 1896 this invention being especially applicable to any such apparatus or mechanism wherein the plaited outer cover or outermost cover of braid or a textile material is employed; all of which forms of outer cover we will for the sake of brevity refer to as "the "braided outer cover".

Now the present invention relates more especially to the attachment of the ends of said braided outer cover to the parts of the mechanism by which the said ends are to be held and secured and means for effecting such attachment, a further object being to enable said attachment to be simply quickly and cheaply effected and in suchwise that the extreme ends of said braided outer cover are concealed or entirely enclosed so as to thereby produce a neat and finished appearance of the mechanism at said points of attachment as well as to effect a strong and reliable attachment at each end of said braided outer cover.

For the sake of example we will now proceed to describe our present invention as carried into practice in conjunction with mechanism of the aforesaid character as follows:—

Taking the case of a photographic release wherein the innermost member consists of a wire adapted to be forced through an open coiled intermediate member with a braided outer cover or stocking (such as referred to in our aforesaid Patents Nos. 13157 and 15645 of 1905):—

(1) Towards the opposite end of the mechanism to that end which carries the push-button the end of the braided outer cover has a sleeve slid thereover which sleeve either carries or is formed on or attached to the means by which the mechanism is attached to the photographic shutter or other part or thing to be operated and after thus passing said sleeve *viz.* a little distance along the braided outer cover then an inner sleeve with a flared outer end is passed inside said end of the braided outer cover and thereupon the said outer sleeve is then slid back along the braided outer cover and over said flared inner sleeve so as to lock or securely hold this end of the braided outer cover therein-between.

[*Price 8d.*]

(2) Towards that end of the mechanism carrying the push-button the end of the braided outer cover is passed over an inner sleeve which surrounds the said open coiled member or intermediate member the outer end of said sleeve being flared or bell-mouthed and then another sleeve which is also flared to a still greater extent and of larger size than the inner sleeve is slid over the stocking and inner sleeve and grips and holds this end of the braided outer cover.

The inner end of the push-button (carrying the innermost member of the mechanism) having been placed in position inside the inner sleeve and open coiled member a finishing washer or cap loose on the shank of the push-button is then brought up into position against the flared ends of the two sleeves and secured thereto in any suitable manner advantageously by binding crimping or beading or turning in or folding the edge of said finishing washer or cap over the edges of the flared outer sleeve so that these two parts are permanently joined together and this completes the joint or attachment at this end of the release.

At both ends therefore the end of the braided outer cover is tightly wedged together and held in between the aforesaid sleeves in suchwise that the greater the pull or tractive force exerted the greater the hold.

As an additional security the exterior surface of the last-named flared inner sleeve (as also the aforesaid inner sleeve at the other end) may be corrugated ridged roughened screw-threaded or the like so as to thereby the better grip and hold the end of the braided cover wedged or forced against same by the outer sleeve.

As a modification the inner sleeve at the push-button end of the mechanism may be formed with a larger flared end than the outer flared sleeve or thimble so that when the two sleeves have been placed in position with the end of the braided outer cover secured between them thereafter the edges of the two said sleeves may be secured together by any suitable means such as crimping beading folding or binding same together in any suitable manner and in this case the push-button is prevented from coming out of said sleeves by means of the innermost member of the mechanism which is attached at one end to said push-button and at the other to a plunger or enlarged part which is adapted to act as a stop and limit the return movement of said innermost member and push-button thereon a suitable spring or springs being interposed and if desired the said inner sleeve may be provided with any suitable means such as an annular inset or in-turned edge to form a stop for said spring as also for the open coiled member.

Similarly at the opposite end of said release the parts between which the end of the braided cover is secured may be locked together by any suitable means as aforesaid.

The said inner sleeve at either end (upon which the braided outer cover is secured as aforesaid) may either be of thin metal tubing flared at the outer end as aforesaid or may be of any other suitable construction as for example it may be a coiled wire or wires which are formed with a flared outer end to act in a similar manner to the said flared tubing.

Furthermore either the auxiliary spring when employed or the open coiled intermediate member of the mechanism may have the end thereof secured as with the end of the braided outer cover namely in between the said sleeves.

For carrying out the invention in conjunction with mechanism for transmitting power by traction on the innermost member instead of by pressure thereon as aforesaid the intermediate member must be incompressible namely it may be a closely coiled wire while the braided outer cover in this case is secured between two sleeves the inner one of which is expanded (by any suitable expanding tool) against the inside of the outer sleeve after the parts have been placed in position with the end of the braided outer cover therein-between and said outer sleeve is prolonged and terminating in a head or button said prolonged part of said sleeve being slotted so as to permit the operation

device (to which the innermost member is attached) to slide in said slotted part.

The inner sleeve is provided with a swelling or other means to form an annular shoulder or stop against which the intermediate incompressible member bears or said inner end of the intermediate member may be passed in between the two sleeves and there locked and securely held by fastening same therein-between.

At the other end the braided outer cover may advantageously be secured between the two sleeves which are permanently secured to one another as aforesaid or same may be secured by inserting the end of the braided outer cover and the end of the intermediate incompressible member within an outer sleeve and then screwing inside said intermediate member and braided outer cover a screw plug of tapering form so as to firmly lock and hold the parts together at this end.

Dated this 9th day of March 1906.

TONGUE & BIRKBECK,
Agents for the Applicants.

COMPLETE SPECIFICATION.

"Improvements in or relating to Apparatus or Mechanism for the Transmission of Power in Varying Directions".

We, ARTHUR HENRY EDWARDS, of 96 Lordship Road, Stoke Newington, London; Engineer: and CHARLES HENRY WATSON, of 313 High Holborn, London; Optician: do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to apparatus or mechanism for the transmission of power in varying directions.

Apparatus or mechanism for the transmission of power in varying directions is well-known comprising two or more members one of which is slidable longitudinally upon or in or with respect to the other or others and such mechanism has among other uses been specially constructed and arranged as the "release" or means for operating (*i.e.* either opening or closing or releasing) photographic shutters see for example Edwards' Patents Nos. 12639 and 12812 both of 1901 and Edwards & Watson's Patents Nos. 5047 and 28792 of 1903; and Nos. 13157 and 15645 both of 1905 and also see Bowden's Patent No. 25325 of 1896; this invention being especially applicable to any such apparatus or mechanism wherein a plaited outer cover or outermost cover of braid or a textile material is employed; all of which forms of outer cover we will for the sake of brevity hereinafter refer to as the "braided outer cover".

Now the present invention relates more especially to the attachment of the ends of said braided outer cover to the parts of the mechanism by which the said ends are to be held and secured and means for effecting such attachment, a further object being to enable said attachment to be simply quickly and cheaply effected and in suchwise that the extreme ends of said braided outer cover are concealed or entirely enclosed so as to thereby produce a neat and finished appearance of the mechanism at said points of attachment as well as to effect a strong and reliable attachment at each end of said braided outer cover.

And in order that our present invention may be easily understood and readily carried into practice we will—with reference to the accompanying drawings—now proceed to describe same as carried into practice in the case of a photographic "release" wherein the innermost member consists of a wire enclosed

by an open-coiled intermediate member with a braided outer cover or stocking such as referred to in our aforesaid Patents Nos. 13157 and 15645 both of 1905.

Referring to the accompanying drawings:—

Each figure respectively is a longitudinal sectional view or part view of such mechanism as aforesaid, showing the present invention applied thereto; and similar letters of reference indicate similar parts throughout.

Towards the end B of the mechanism (which is opposite to the end A which carries the push-button *a*) the end of the braided outer cover *b* has a sleeve *c* slid thereover which sleeve either carries the means such as the four spring prongs *d* of the well-known type such as shown in Fig. 1 by which the mechanism is attached to the photographic shutter (or other part or thing to be operated) or said sleeve *c* may be attached to said means for example as shown in Fig. 2 by spinning or turning in the edge c^1 thereof over the flange c^1 of the inner sleeve *e* which latter by means of its screw-threaded outer end e^2 serves to attach the mechanism to the shutter *etc.*; or, as shown in Fig. 3, the sleeve *c* may be formed with the enlarged end c^2 which is internally screw-threaded and forms the means (integral with the sleeve *c*) for attaching the mechanism to the shutter *etc.* After thus passing said sleeve *c*, a little distance along the braided outer cover *b* then an inner sleeve *e* with a flared outer end e^1 as shown in Fig. 1 (or a flared part e^1 as shown in Fig. 2) is passed inside said end of the braided outer cover *b* and thereupon the said outer sleeve *c* is then slid back along the braided outer cover *b* and over said flared inner sleeve *e* so as to lock or securely hold this end of the braided outer cover *b* thereinbetween.

In Fig. 3—the inner sleeve *e* instead of being flared at its outer end is reduced at its inner end so as to form a shoulder or tapering part e^3 between which and the corresponding shoulder or taper c^3 on the inside of the sleeve *c* the braided outer cover *b* is locked and securely held as aforesaid.

Referring now more particularly to Figs. 1 and 2:—

Towards the end A of the mechanism carrying the push-button *a* the end of the braided outer cover *b* is passed over an inner sleeve *f* which surrounds the said open coiled member or intermediate member *g* the outer end f^1 of said sleeve *f* being flared or bell-mouthed; and then another sleeve *h* which is also flared to a still greater extent and of larger size than the inner sleeve *f* f^1 is slid over the stocking *b* and inner sleeve *f*, and grips and holds this end of the braided outer cover between same

The inner end of the push-button or shank *k* of said push-button (carrying the innermost member *i.e.* the wire *i* of the mechanism) having been placed in position inside the inner sleeve *f* and open coiled member *g*, then in the arrangement shown in Fig. 1 a finishing washer or cap *j* (loose on the shank *k* of the push-button *a*) is then brought up into position against or towards the flared ends f^1 and h^1 of the two sleeves *f* and *h* and secured thereto in any suitable manner advantageously by binding crimping or beading or turning-in or folding the edge of said finishing washer or cap *j* over the edge h^1 of the flared outer sleeve *h* so that these two parts are permanently joined together and this completes the joint or attachment of these parts at this end of the release; or this may be effected as illustrated in Fig. 2 by turning the flared outer edge f^1 of the inner sleeve *f* over the edge h^1 of the outer sleeve *h*.

At both ends therefore the end of the braided outer cover *b* is tightly wedged and held in between the aforesaid sleeves in suchwise that the greater the pull or tractive force exerted the greater the hold; and furthermore both the said ends are thereby concealed thus producing a neat finish.

As an additional security the exterior surface of the flared inner sleeve *f*—as also the aforesaid inner sleeve *e* at the other end—may be corrugated, ridged, roughened, screw-threaded, or the like, so as thereby the better to grip and hold the end of the braided cover *b* wedged or forced against same by the outer sleeves *h* and *c* respectively.

In the case illustrated in Fig. 2—the shank *k* of the push-button is prevented from coming out of said sleeves *f* and *h* by means of the innermost member *i* of the mechanism which is attached at one end to said push-button *a* and at the other to a plunger or enlarged part *l* the inner end l^1 of which bears against the inwardly projecting annular ledge e^1 on the sleeve *e* (Fig. 2) and will consequently act as a stop and limit the return movement of said innermost member *i* and push-button *a* thereon; a suitable spring a^2 (or springs) being provided to normally keep the push-button *a* pressed outwards; the said inner sleeve *f* (Fig. 2) being provided with any suitable means such as an annular inset f^2 or in-turned edge to form a stop for said spring a^2 as also for the open-coiled member *g*.

In Fig. 3 a modified arrangement is shown in which the inner sleeve *f* is formed of an open-coiled wire which is flared at the end f^1 and the outer sleeve h^1 acts as in Fig. 1 and has the cap *j* secured thereto also as in Fig. 1.

In this arrangement (Fig. 3) one end of the auxiliary spring *x*—and in Fig. 1 one end of the open-coiled spring *q* forming the intermediate member *g*—bears on the enlargement k^1 on the shank *k* of the push-button *a* and the other end of this spring *x* (Fig. 3) bears against the inside of the thimble or short sleeve *y* located within the said inner sleeve *f* of coiled wire; the object of this arrangement in each case being to normally keep the push-button *a* pressed outwards; such outward movement however being limited by means of the inturned edge j^2 (of the cap *j*) against which bears the shoulder k^2 on the said enlarged part k^1 of the shank *k* which thereby acts as a stop.

At the end B of said release the parts between which the end of the braided cover *b* is secured may be locked together by any of the hereinbefore described means or by any other suitable means as aforesaid.

The said inner sleeves *e* and *f* at either end (upon which the braided outer cover *b* is secured as aforesaid) may either be of thin metal tubing flared at the outer end as aforesaid as in Fig. 1 or may be of any other suitable construction as for example it may be a coiled wire (as illustrated in Fig. 3) or wires which are formed with a flared outer end to act in a similar manner to the said flared tubing.

Furthermore either the auxiliary spring when employed, or the open-coiled intermediate member *g* of the mechanism, may have the end thereof secured with the end of the braided outer cover *b* namely in between the said sleeves.

Figs. 4 to 7 illustrate various modifications in attaching the braided outer cover *b* at the push-button end of the mechanism.

Referring now to Fig. 4:—

In this arrangement the inner sleeve is formed by a coiled wire *f* expanded or flared towards its end f^1 as in Fig. 3 but in this case the cap *j* (to which the outer sleeve *h* is attached as in Figs. 1 and 3) is provided with an inwardly extending tubular part j^1 which is advantageously corrugated or spirally ridged to fit the convolutions of the coiled wire forming the end f^1 of the inner sleeve *f*; between which inner portion j^1 and the flared outer sleeve *h* the end of the braided outer cover is securely held as aforesaid.

Referring now to Fig. 5:

In this arrangement the outer sleeve *h* is prolonged and at its inner end h^2 is tapered inwardly *i.e.* is of reduced diameter between which inwardly tapering end h^2 and the conical or tapering sleeve *m* the braided outer cover is firmly secured by wedging action as aforesaid; the other end of the outer sleeve *h* being secured to and by a cap *j* while the shank *k* of the push-button *a* is provided with an annular swelling k^3 which serves as an abutment to act against the stop formed by the inwardly turned edge j^2 on the cap *j* as in Figs. 1 and 3.

x is the auxiliary spring which tends to keep the push-button *a* normally pressed outwards.

In the arrangement shown Fig. 6:—

The braided outer cover *b* is held securely between the inwardly tapering end h^2 of the outer sleeve *h* and the inner sleeve *f* which latter does not extend to the cap *j* in this case but is of short length and terminates at f^2 in the larger part of the outer sleeve *h*; the cap or part *j* in this case having a sleeve portion j^2 adapted to slide freely on the exterior of the sleeve *h* and having fixed thereto a cross-bar j^3 adapted to slide in the slotted portion h^3 of the sleeve *h*, which sleeve *h* in this case is prolonged and terminates at its extreme end in the push-button *a*.

To the said cross-bar j^3 is attached the inner end of the wire *i* forming the innermost member of the mechanism, and one end of the spring *x* is also attached to said bar j^3 and at its other end this spring *x* is fixed in the short thimble *u* which is cramped and locked in the position shown in Fig. 6 between said spring *x* and the open coiled outer member *g* of the mechanism.

Referring now to Fig. 7:—

This shows a somewhat similar arrangement to Fig. 6 the braided outer cover *b* being securely held in between the tapering end h^2 of the outer sleeve *h* and the inner sleeve *f* (which is a short sleeve terminating at f^2 after the manner shown in Fig. 6) the end of the open coiled wire *g* (forming the intermediate member) in this case being shown flared, and this flared end located between the tapering portion of the inner sleeve *f* and the tapering portion of the outer sleeve *h*—which latter is prolonged as in Fig. 6 and has the button *a* formed on the end thereon; the device *j* in this case (as in Fig. 6) having a tubular portion j^2 adapted to slide on the exterior of the sleeve *h* and having a cross-bar j^3 travelling in the slot h^3 in the sleeve *h* to which cross-bar j^3 one end of the wire *i* is fixed the said device *j* being normally kept pressed away from the button *a* by means of the interposed auxiliary spring a^4 as shown in said Fig 7.

In transmitting power by traction on the innermost member the intermediate incompressible member may be a closely coiled wire while the braided outer cover in this case is secured between two sleeves the inner one of which is expanded (by any suitable expanding tool) against the inside of the outer sleeve after the parts have been placed in position with the end of the braided outer cover thereinbetween and said outer sleeve is prolonged and terminates in a head or button said prolonged part of said sleeve being slotted so as to permit the operating device (to which the innermost member is attached) to slide in said slotted part.

The inner sleeve is provided with a swelling or other means to form an annular shoulder or stop against which the intermediate incompressible member bears or said inner end of the intermediate member may be passed in between the two sleeves and there locked and securely held by fastening same thereinbetween.

At the other end the braided outer cover may advantageously be secured between the two sleeves which are permanently secured to one another as aforesaid or same may be secured by inserting the end of the braided outer cover and the end of the intermediate incompressible member within an outer sleeve and then screwing inside said intermediate member and braided outer cover a screw plug of tapering form so as to firmly lock and hold the parts together at this end.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed we declare that what we claim is:—

1. In apparatus or mechanism for the transmission of power in varying directions of the character referred to and having a braided outer cover of the character referred to, the herein described means for securely attaching the end of said braided outer cover said means comprising an outer sleeve of tapering form or shouldered or stepped internally and an inner sleeve of tapering form or shouldered or stepped externally and between which said braided outer

cover is gripped and held substantially in the manner and for the purposes hereinbefore described.

2. The herein described apparatus or mechanism for the transmission of power in varying directions with means to securely hold the end of the braided outer cover all substantially in the manner and for the purposes hereinbefore described with reference to and as illustrated in Fig. 1, or Fig. 2, or Fig. 3, or Fig. 4, or Fig. 5, or Fig. 6, or Fig. 7, of the drawings hereunto annexed.

Dated this 8th day of September 1906.

TONGUE & BIRKBECK,
Birkbeck Bank Chambers, Chancery Lane, London, W.C.,
Agents for the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1907.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

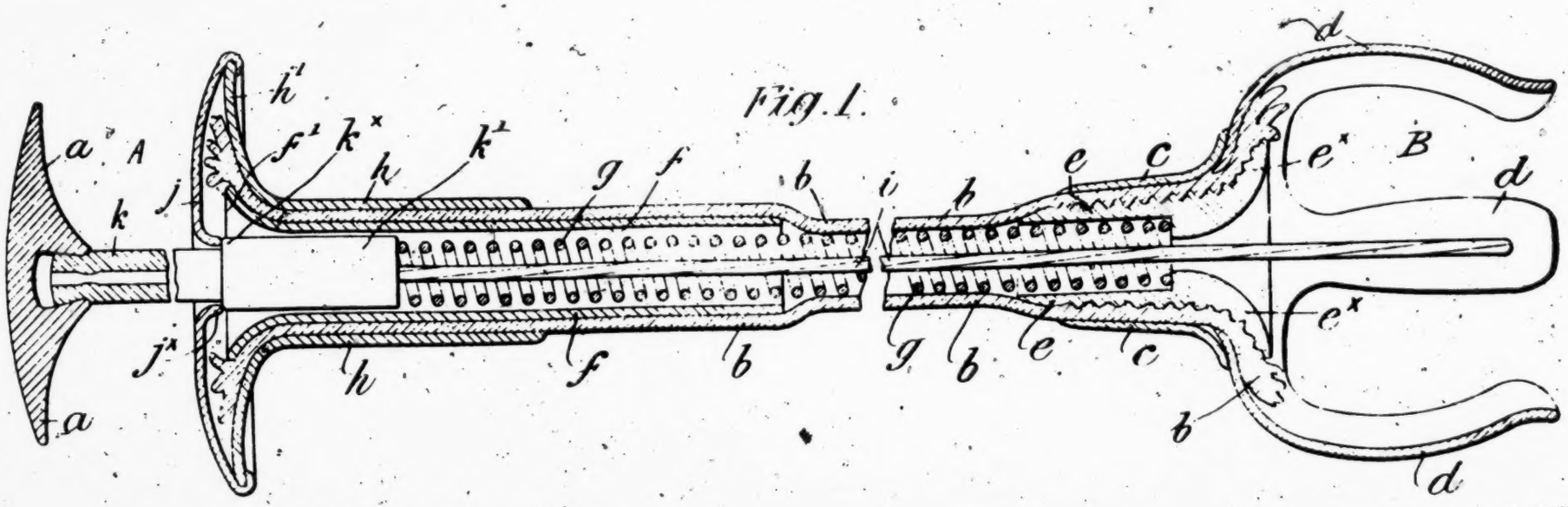
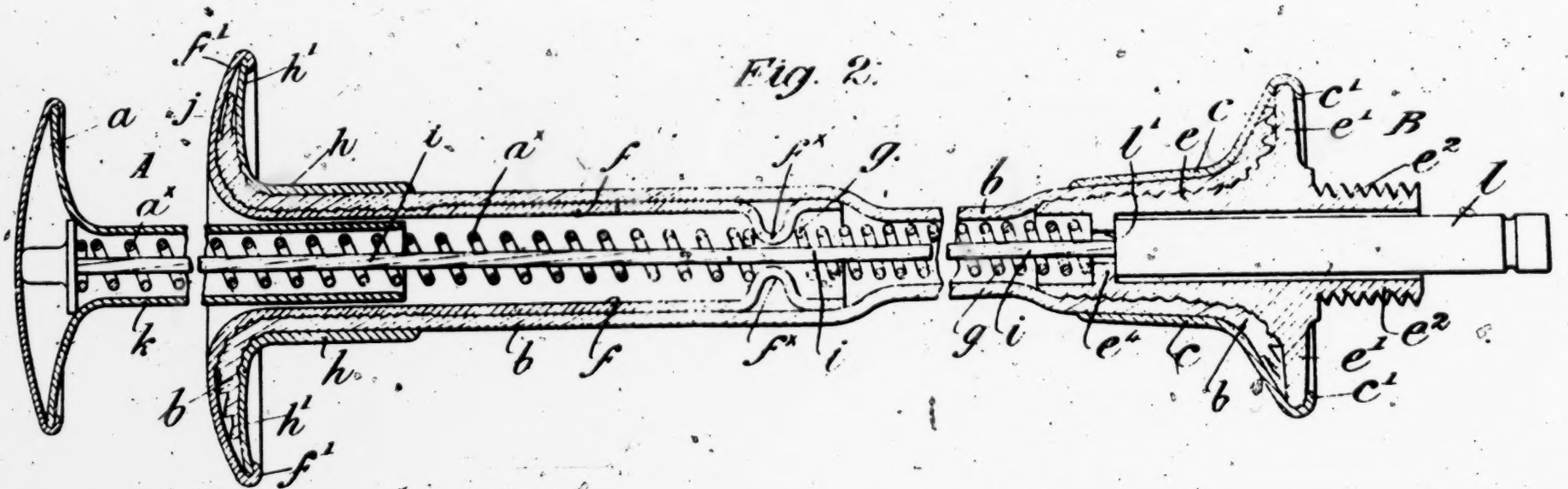


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.

Fig. 3.

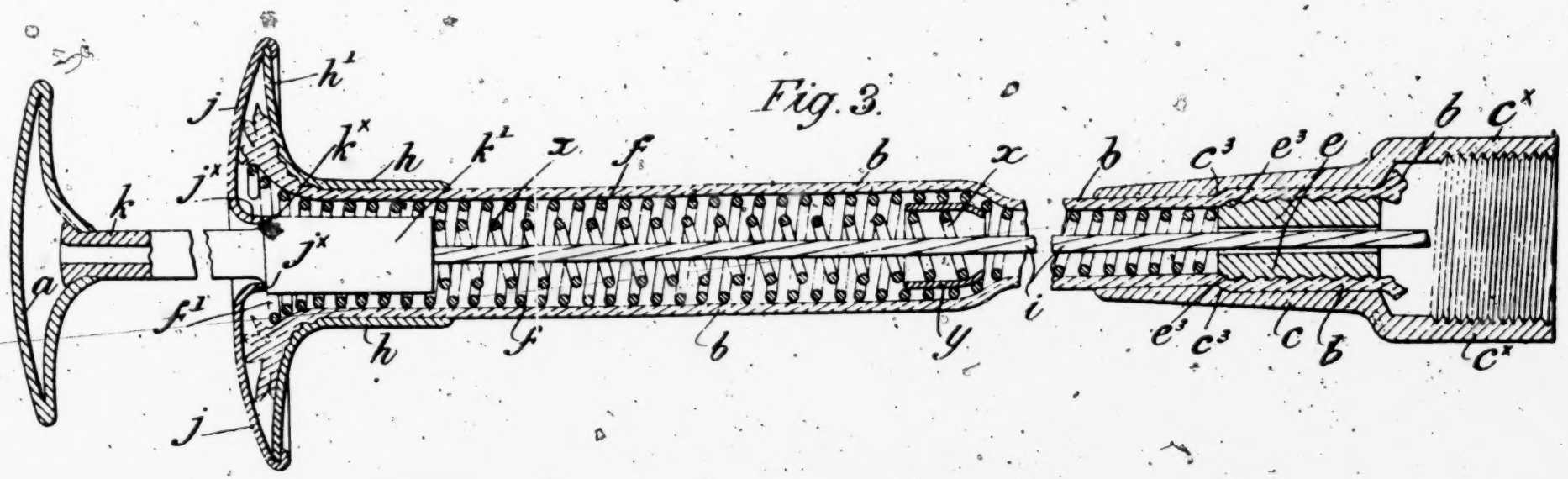
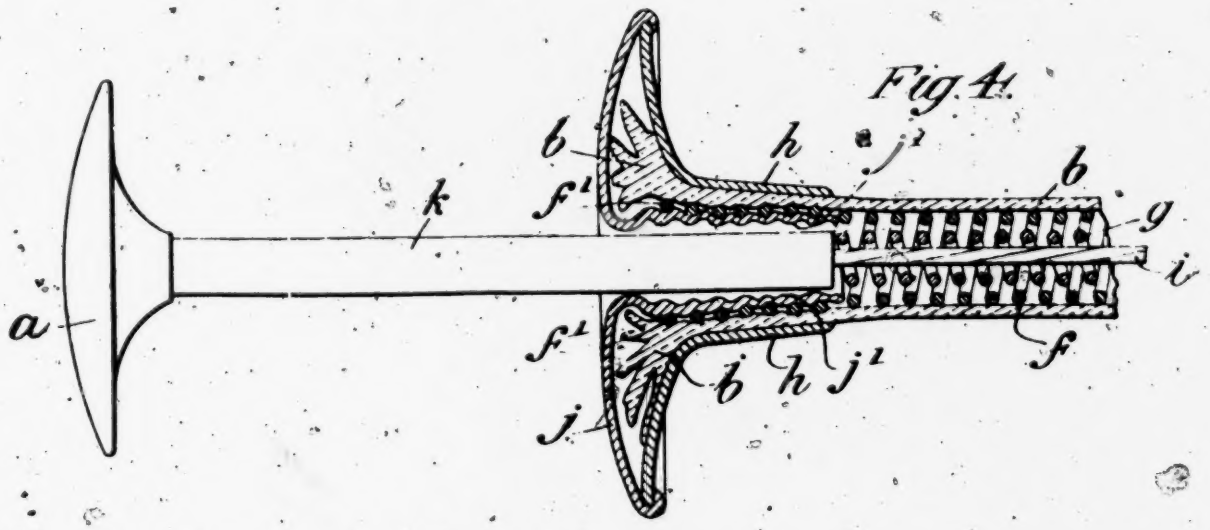


Fig. 4.



A.D. [illegible] No. 511

[illegible] Complete Specification.

Fig. 5.

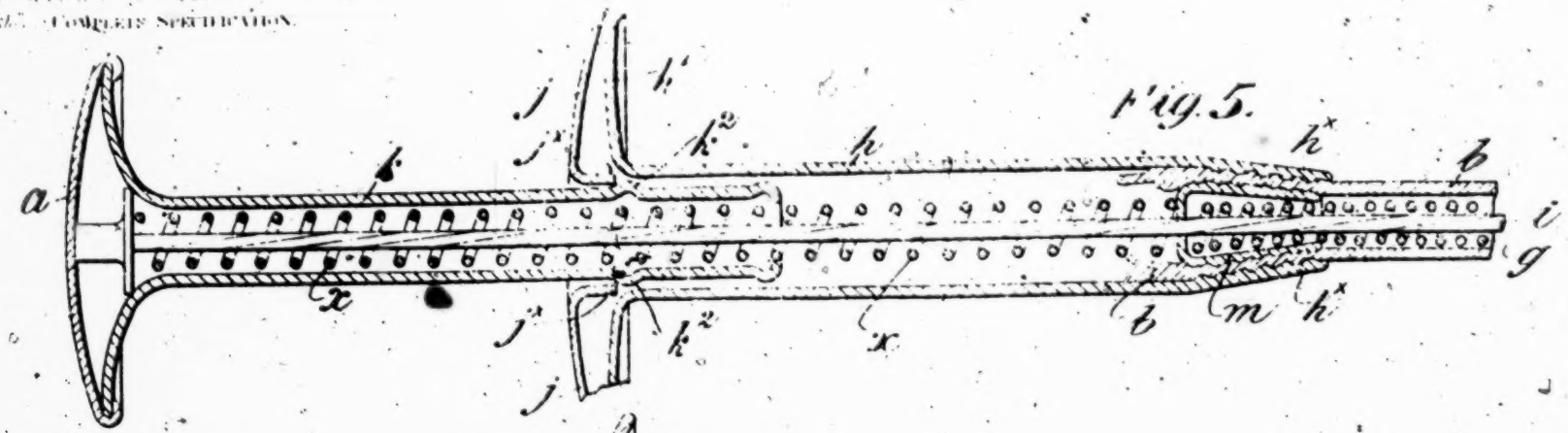


Fig. 6.

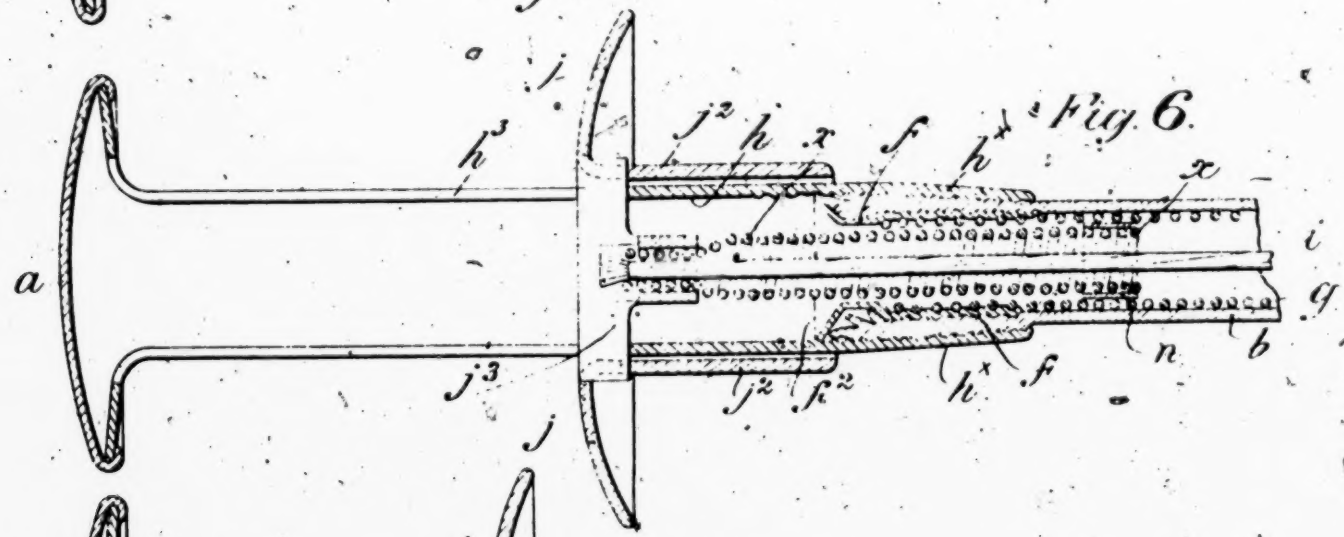
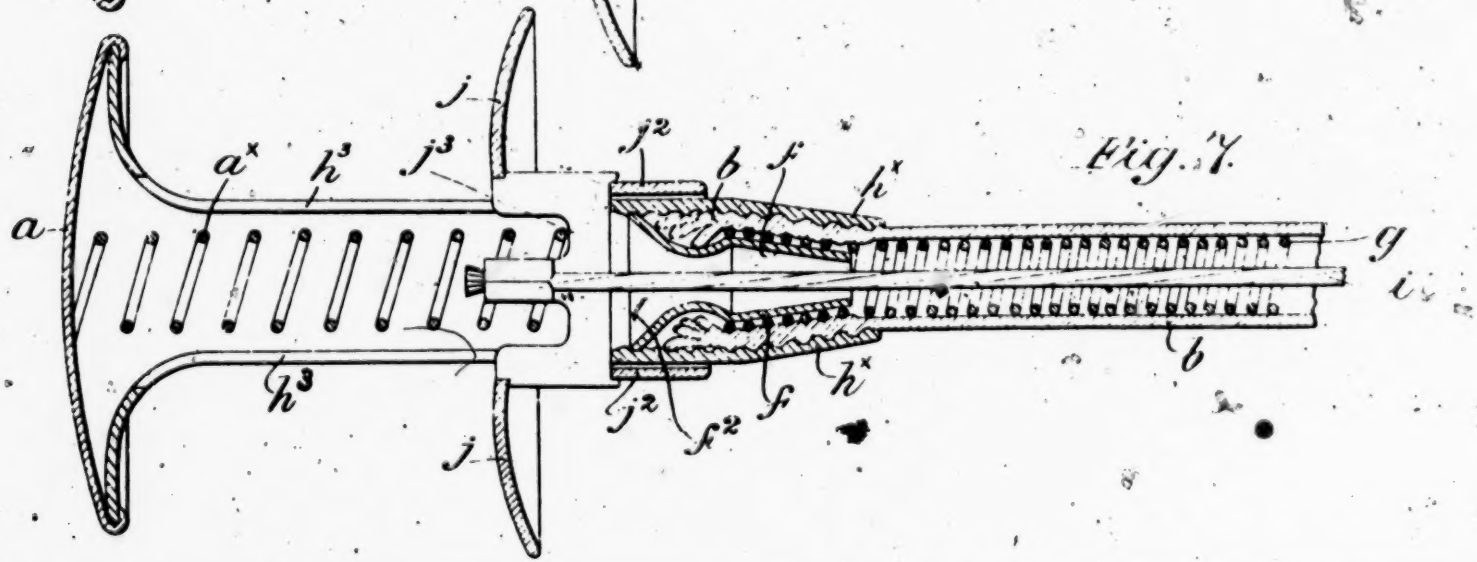


Fig. 7.



KAISERLICHES PATENTAMT.

PATENTSCHRIFT

№ 147572

KLASSE 47b.

ALFRED WERMANN IN DRESDEN.

Vorrichtung zur Übertragung von Druckkraft.

Patentiert im Deutschen Reiche vom 28. Mai 1902 ab.

Es sind Vorrichtungen zum Übertragen des Druckes bekannt, bei denen in einem rohrförmigen, unzusammendrückbaren, aber biegsamen Führungsgliede ein Übertragungsglied frei durchgeführt wird. Als Übertragungsglied wählte man ein Drahtseil oder eine Reihe aneinander stoßenden Stifte. Um nun die Genauigkeit der Arbeit derartiger Vorrichtungen zu erhöhen, ist nach dieser Erfindung als Übertragungsglied eine unzusammendrückbare Drahtschraube im Führungsglied angeordnet.

Die Vorrichtung ist in der Zeichnung dargestellt, und zwar zeigt:

Fig. 1 die Ansicht derselben,

Fig. 2 den Druckempfänger im Schnitt.

Eine Schraubenfeder *a* ist an ihren Enden mit den Hülsen *b* und *c* fest verbunden. In dieser Schraubenfeder *a* liegt eine zweite *d*, die einerseits mit dem Druckempfänger *g*, andererseits mit dem Druckerteiler *f* fest verbunden ist. Der Druckempfänger *g* ist in der Hülse *b* unter Überwindung des Druckes der Feder *h*, der Druckerteiler *f* in der Hülse *c* verschiebbar, so daß also bei Erteilung eines Druckes auf den Druckempfänger *g* die Drahtschraube *d* sich in der Drahtschraube *a* verschiebt und so den Druck bei *f* auf irgend einen Gegenstand ausüben kann, ohne daß die Zwischenleitung zwischen *g* und *f* eine bestimmte Lage einzunehmen braucht.

Soll der Druck durch den Finger ausgeübt werden, wie z. B. bei den Auslösevorrichtungen an photographischen Apparaten, so kann an der Druckerteilungsstelle ein Handteller *i* oder dergl. angeordnet sein, der der Hand als Widerlager dient.

Patent-Anspruch:

Vorrichtung zur Übertragung von Druckkraft, bestehend aus einem rohrförmigen, unzusammendrückbaren, aber biegsamen Führungsgliede und einem durch dieses frei hindurchführenden Übertragungsgliede, dadurch gekennzeichnet, daß das Übertragungsglied aus einer unzusammendrückbaren Drahtspirale gebildet ist.

Hierzu 1 Blatt Zeichnungen.

ALFRED WERMANN IN DRESDEN.

Vorrichtung zur Übertragung von Druckkraft.

Fig. 1.

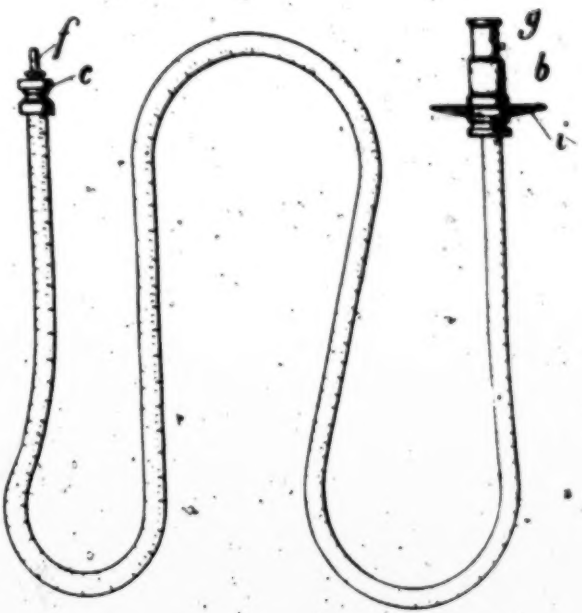
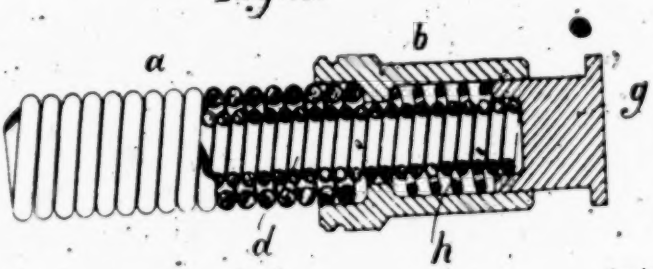


Fig. 2.



Zu der Patentschrift

№ 147572.

PHOTOGR. DRUCK DER REICHSDRUCKEREI

TRANSLATION OF GERMAN PATENT 147,572
Alfred Wermann
MEANS FOR THE TRANSMISSION OF PRESSURE
Patented in Germany, May 28, 1902.

Devices for transferring pressure are known in which a transmission member is led through a tubular, non-compressible but flexible guiding member. As a transmission member, a wire cable or a row of abutting pins have been used. In order to increase the precision of the operation of devices of that type, there is used in accordance with the present invention as the transmission member a non-compressible wire spiral which is arranged within the guide member.

The device is shown in the drawing in which:

Figure 1 is a side view thereof,

Figure 2 the "pressure transferer" in cross-section.

A spiral spring a is fastened at its ends to the sleeves b and c. Within this spiral spring a is a second spring d, which at one end is fastened to the plunger g and on the other end to a thrust member f. The plunger g is displaceable in the sleeve b by overcoming the counter-pressure exerted by spring h, and the thrust member f is displaceable in the sleeve c, so that when pressure is applied to the plunger g the wire spiral d is displaced within the wire spiral a and thereby the thrust member f can exert a pressure on any object without the conducting member between g and f having to occupy any predetermined position.

If the pressure is to be exerted by the finger, as for example in releasing a shutter of photographic apparatus, a small fixed finger grip i or the like may be provided near the point where the pressure is applied, which will serve as a support for the hand.

Patent claim:

Device for the transmission of pressure, consisting of a tubular, non-compressible, but flexible guide member and a transmission member freely extending through the former, characterized by the fact that the transmission member consists of a non-compressible wire coil.

[fol. 85] Clerk's Certificate to foregoing volume of exhibits omitted in printing.

Endorsed on cover: File No. 38,312. U. S. Circuit Court of Appeals, Third Circuit. Term No. 709. Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Petitioners, vs. Charles B. Gray. Petition for a writ of certiorari and exhibit thereto. Filed January 8, 1934. File No. 709, O. T., 1933.

(4508-C)

FILE COPY

IN THE

Supreme Court of the United States

JAN 8 19

CHARLES ELMORE

OCTOBER TERM, 1932. No. 709

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC.,

Petitioners,

v.

CHARLES B. GRAY,

Respondent.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT AND BRIEF IN SUPPORT THEREOF.

WILLIAM H. DAVIS,
GEORGE E. MIDDLETON,
CHARLES W. RILEY,
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New York City, N. Y.

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Pennie, Davis, Marvin and Edmonds,
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Allen, Lane & Scott, Prs., Philadelphia.

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IN THE

Supreme Court of the United States

Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Petitioners,

v.

Charles B. Gray, Respondent.

October Term, 1933.
No.

PETITION FOR WRIT OF CERTIORARI.

TO THE HONORABLE, THE CHIEF JUSTICE AND THE ASSOCIATE JUSTICES OF THE SUPREME COURT OF THE UNITED STATES:

Your petitioners pray that a writ of *certiorari* issue to review the judgment of the United States Circuit Court of Appeals for the Third Circuit entered August 22, 1933 (R., 234), reversing the judgment of the District Court of the United States for the Eastern District of Pennsylvania (R., 207). Petition for a rehearing was later filed (R., 235), and was denied on October 31, 1933 (R., 257).

A certified transcript of the record in the case, including the proceedings in the United States Court of Appeals for the Third Circuit, is furnished herewith in compliance with Rule 38 of the rules of this Court.

SUMMARY STATEMENT OF MATTER INVOLVED

This is an action at law brought by respondent to recover damages for patent infringement. The patent is No. 1,314,867, issued to respondent September 2, 1919, for a flexible power-transmitting mechanism, particularly intended for use as a cable release, a well known device for actuating the shutter of a photographic camera.

The case was first tried before a jury and resulted in a verdict for respondent (R., 195). The trial judge, on motion of petitioners, set this verdict aside and ordered a new trial (R., 196).

Thereafter the parties, by a stipulation in writing, filed with the clerk of the District Court in accord with Section 649 of the Revised Statutes, agreed to waive a jury and to submit the case for trial and determination by the court. The stipulation provided for submission of the issues upon the record already made, subject to any objections there appearing, and also provided that all motions made by either party at the jury trial should be deemed made before the judge trying the case without the inter-

vention of a jury, both parties to have the right of appeal as in other cases (R., 197).

Pursuant to the stipulation, the cause came on to be heard by a judge of the District Court without a jury, upon the pleadings, the evidence, and the arguments and briefs of counsel, counsel for the respective parties offering in evidence the stenographic notes of testimony and minutes of proceedings taken at the jury trial (R., 29, 30).

The trial judge decided the disputed issues of novelty, invention, and infringement* in favor of petitioners (R., 205), and gave judgment accordingly (R., 207). The reasons therefor were stated in an opinion dealing generally with the issues submitted (R., 198-205).

Respondent appealed from the judgment entered against him and filed an assignment of errors containing six specifications (R., 209). The first five are addressed to the findings set forth by the trial judge at the end of his opinion.† The sixth is

* These issues were raised by plea of the general issue and by notice of special matters of defense (R., 21, 22, 24, 26, 27).

† These findings were as follows (R., 205):

"1. The combination of closed coil inner thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together."

"2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of the patent."

"3. Claims 1 and 2 are anticipated."

"4. Claim 3 is not infringed."

"5. Claims 5 and 6 are invalid because United States patent No. 1,297,327, to Dakin and Underwood antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion 'I' applies to these claims."

addressed to the order that judgment be entered for the defendant. Each specification is general, the style being the assertion that "The learned Trial Judge erred in finding as follows:", followed by quotation of the finding or order attacked.

Respondent also filed a bill of exceptions setting forth the evidence and the proceedings at the trial (R., 29-213), from which it appears that no request or motion was made, denied, and excepted to, or any other like action taken, which presented to the trial court the question whether there was any substantial evidence to sustain the findings challenged by the assignment of errors and secured the ruling of the trial court thereon during the trial. Respondent made no request for any findings of fact or for any rulings of law at any time, either during the progress of the first trial or the progress of the second trial, or even after the filing of the opinion ordering entry of judgment for petitioners.

Before the appeal was heard, petitioners filed a motion to dismiss the appeal and/or to affirm the judgment. The ground upon which the motion was based was that the assignment of errors presented no question reviewable by the Court of Appeals (R., 215). Decision on this motion was postponed until final hearing. (R., 218, 219)

In support of the contention that the Circuit Court of Appeals had no power to review the findings

challenged by the assignment of errors, it was urged that, by force of Section 649 of the Revised Statutes, the findings of the trial court are conclusive upon the issues of invention, anticipation, and infringement, if there is any evidence upon which they could be based; that whether or not the findings made upon those issues are supported by any substantial evidence is a question of law reviewable only when a request or motion has been made, denied, and excepted to, or some other like action taken which presented that question to the trial court and secured its ruling thereon during the trial, as required by Section 700 of the Revised Statutes; that the question whether there was any substantial evidence to support the findings made by the trial judge on the issues of invention, anticipation, and infringement was not raised by the respondent in this case either by a request for a ruling, by motion for judgment, or otherwise; and that the bill of exceptions filed fails to disclose the reservation of any exceptions to rulings of the court in the progress of the trial.

On final hearing, the Court of Appeals decided it had power, notwithstanding "the procedure in this case," to review the finding made by the trial court on the question whether what the patentee did required invention (Opinion R., 231, 233); and, holding there was no substantial evidence to support the trial court's finding (R., 233), reversed the judgment of the District Court.

QUESTIONS PRESENTED

The decision of the Circuit Court of Appeals presents the following questions:

1. Does an appellate court have power, in view of Section 649 of the Revised Statutes, to review a finding of the trial court upon the question whether an improvement requires mere mechanical skill or the exercise of invention, merely because there is no conflict in the evidence introduced to show what the improvement is and how it differs from what was in the prior art?

2. Does an appellate court have power, in view of Section 700 of the Revised Statutes, to review conclusions of law embodied in general findings on the issues of invention, anticipation, and infringement, made by a trial court in an action at law for patent infringement, in the absence of any action taken by appellant to present the question of law involved to the trial court and secure its ruling thereon during the progress of the trial?

3. Does an appellate court have power, in view of Section 700 of the Revised Statutes, to review general findings on the issues of invention, anticipation, and infringement, made by a trial court in an action at law for patent infringement, to determine whether there was any evidence upon which they could be based, when no ruling on that specific question was obtained during the progress of the trial, ex-

cepted to at the time, and duly preserved by a bill of exceptions?

4. Can a finding of no invention be set aside on the ground that there is no evidence on which it could be based where what the alleged improvement is and how it differs in structure and operation from what was in the prior art are fully established by evidence about which there is no dispute?

STATUTES INVOLVED

The statutes affecting the scope of review in cases tried and determined by a court without the intervention of a jury are Sections 649 and 700 of the Revised Statutes (28 U. S. Code Secs. 773, 875). R. S. Sec. 649 provides:

> "Issues of fact in civil cases in any district court may be tried and determined by the court, without the intervention of a jury, whenever the parties, or their attorneys of record, agree to waive a jury by a stipulation in writing filed with the clerk or by an oral stipulation made in open court and entered in the record. The finding of the court upon the facts, which may be either general or special, shall have the same effect as the verdict of a jury."

R. S. Sec. 700 provides:

> "When an issue of fact in any civil cause in a district court is tried and determined by the court without the intervention of a jury, accord-

ing to section six hundred and forty-nine, the rulings of the court in the progress of the trial of the cause, if excepted to at the time, and duly presented by a bill of exceptions, may be reviewed upon a writ of error or upon appeal; and when the finding is special the review may extend to the determination of the sufficiency of the facts found to support the judgment."

REASONS FOR GRANTING THE WRIT.

The discretionary power of this Court to grant a writ of certiorari is invoked upon the following grounds:

1. The decision of the Circuit Court of Appeals that the question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention is to be determined as a matter of law, rather than as a question of fact, where there is no conflict in the evidence introduced to show what the improvement is and how it differs from what was in the prior art, is in apparent conflict with the decisions of this Court in *Thompson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S. 445, 446, and *Keyes* v. *Grant*, 118 U. S. 25, 36, 37.

2. The decision of the Circuit Court of Appeals that it has power to review conclusions of law embodied in general findings made by the trial court is in direct conflict with the decisions of this Court in *Arthur C. Harvey Co.* v. *Malley*, 288 U. S. 415, and *Fleischmann Co.* v. *United States*, 270 U. S. 349.

3. The decision of the Circuit Court of Appeals that it has power to review the findings of the trial court to determine whether there was any evidence upon which they could be based is in direct conflict with the decision of the Circuit Court of Appeals for the Eighth Circuit in *Gerlach* v. *Chicago, R. I. etc. R. Co.*, 65 F. (2d) 862; and in apparent conflict with the decision of this Court in *Martinton* v. *Fairbanks,* 112 U. S. 670; and with decisions of the Circuit Courts of Appeals for the Fourth, Sixth, Eighth, and Ninth Circuits.

4. In deciding that testimony establishing what the alleged improvement was and how it differs in structure and operation from what was in the prior art affords no evidence upon which the trial court could base a finding of no invention, the Circuit Court of Appeals has decided an important question of patent law which has not been, but should be, settled by this Court.

WHEREFORE,—it is respectfully submitted that this petition for a writ of certiorari to review the judgment of the Circuit Court of Appeals for the Third Circuit should be granted.

WILLIAM H. DAVIS

GEORGE E. MIDDLETON

CHARLES W. RILEY

ALLEN HUNTER WHITE

Counsel for Petitioners.

IN THE

Supreme Court of the United States

Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Petitioners,

v.

Charles B. Gray, Respondent.

October Term, 1933.

No.

BRIEF IN SUPPORT OF PETITION FOR WRIT OF CERTIORARI.

OPINIONS OF THE COURT BELOW

The opinion of the District Court for the Eastern District of Pennsylvania, written by District Judge William H. Kirkpatrick, was filed July 13, 1932. It appears at page 198 of the record. It has not been reported. The opinion of the Circuit Court of Appeals for the Third Circuit (Circuit Judges Buffington, Davis, and Thompson), written by Judge

Buffington, was filed August 22, 1933. It appears at page 219 of the record and is reported in 67 F. (2d), 190.

JURISDICTION

The jurisdiction of this Court is invoked under section 240 (a) of the Judicial Code as amended by the Act of February 13, 1925, c. 229 (28 U. S. Code, Sec. 347).

The judgment of the Circuit Court of Appeals for the Third Circuit which petitioners seek to have reviewed was entered August 22, 1933 (R., 234). Thereafter a petition for rehearing was filed (R., 235) which was denied on October 31, 1933 (R., 257).

STATEMENT OF THE CASE

The essential facts of the case are stated in the accompanying petition for a writ of certiorari, and in the interest of brevity are not repeated here. Any necessary elaboration of the facts will be made in the course of the argument which follows.

SPECIFICATION OF ERRORS

The errors which the petitioners will urge, if the writ of certiorari is issued, are that the Circuit Court of Appeals for the Third Circuit erred:

1. In holding that it had power to review the findings of the District Court on the questions of novelty, invention and infringement.

2. In holding that the findings of the District Court were not sustained by any substantial evidence.

3. In reversing the judgment of the District Court in favor of the petitioners.

SUMMARY OF ARGUMENT

The points of argument will follow the reasons relied upon for allowance of the writ of certiorari and will be discussed in the order set out in the petition (*ante*, pp. 8-9).

ARGUMENT.

I

The decision of the Circuit Court of Appeals that the question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention is to be determined as a matter of law, rather than as a question of fact, where there is no conflict in the evidence introduced to show what the improvement is and how it differs from what was in the prior art, is in apparent conflict with the decisions of this Court in Thompson Spot Welder Co. v. Ford Motor Co., 265 U. S. 445, 446 and Keyes v. Grant, 118 U. S. 25, 36, 37.

The decision of the Circuit Court of Appeals that it has power to review the findings made by the trial

judge on the issues of invention, anticipation, and infringement, was based in part upon the view that "there were no disputed facts" to be determined by the trial judge with respect to what the alleged improvement was and how it differs in structure and operation from what was in the prior art (R., 231), and that the question of invention was, therefore, to be determined as a matter of law, rather than as a question of fact upon which the finding of the trial court would be conclusive.

In support of this view, the Circuit Court of Appeals cited the decisions of this Court in *Heald* v. *Rice*, 104 U. S. 737; *Market Street R. Co.* v. *Rowley*, 155 U. S. 621, and *Singer* v. *Cramer*, 192 U. S. 265.

These cases, however, do not support the proposition to which they are cited. They merely hold that the question of *identity* may be a matter of law. Thus, in *Heald* v. *Rice* the validity of a reissued patent was challenged on the ground that the reissue patent was not for the same invention as the original patent. In *Market Street R. Co.* v. *Rowley*, the validity of the patent in suit was challenged on the ground that the inventions and devices described in prior patents disclosed the same invention as the patentee claimed. In *Singer* v. *Cramer*, the question was whether the Diehl device, upon which the charge of infringement was based, was substantially the same as that of Cramer.

But where *invention* is in issue, the question is not one of identity between the alleged improvement and what was in the prior art. Novelty over the prior art

is conceded, and the question is whether it required more than mere mechanical skill to make the change.

In *Thompson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S., 445, this Court said (p. 446):

> "The question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention, *is one of fact;* and, in an action at law for infringement, is to be left to the determination of the jury. *Keyes* v. *Grant,* 118 U. S. 25, 36, 37; *Holmes* v. *Truman* (C. C. A.) 67 Fed. 542, 543; *Hall* v. *Wiles* (C. C.), 2 Bldtchf. 194, 11 Fed. Cas. 280, 283; *Poppenhausen* v. *Falke* (C. C.) 5 Bldtchf. 46, 19 Fed. Cas. 1052, 1054; *Shuter* v. *Davis* (C. C.), 16 Fed. 564, 566; *Blessing* v. *Copper Works* (C. C.), 34 Fed. 753, 754."

In *Keyes* v. *Grant,* 118 U. S. 25, this Court held that the question of invention was to be decided as a question of fact, and not as a matter of law, in a case where there was no dispute as to what the differences were between the improved furnace and the furnaces of the prior art.

II.

The decision of the Circuit Court of Appeals that it has power to review conclusions of law embodied in general findings made by the trial court is in direct conflict with the decisions of this Court in Arthur C. Harvey Co. v. Malley, 288 U. S. 415, and Fleischmann Co. v. United States, 270 U. S. 349.

In *Fleischmann Co.* v. *United States,* 270 U. S. 349, this Court, speaking of the effect of Section 700 of the Revised Statutes, said (pp. 355, 356):

"And it is settled by repeated decisions that, in the absence of special findings, the general finding of the court is conclusive upon all matters of fact, and prevents any inquiry into the conclusions of law embodied therein, except in so far as the rulings during the progress of the trial were excepted to and duly preserved by bill of exceptions, as required by the statute. [Citing Cases]

* * * * * * *

To obtain a review by an appellate court of the conclusions of law a party must either obtain from the trial court special findings which raise the legal propositions, or present the propositions of law to the court and obtain a ruling on them. *Norris* v. *Jackson, supra,* [9 Wall. 125], 129; *Martinton* v. *Fairbanks,* 112 U. S. 673. That is, as was said in *Humphreys* v. *Third Nat. Bank,* 21 C. C. A. 538, 43 U. S. App. 698, 75 Fed. 855, 'he should request special findings of fact by the court, framed like a special verdict of a jury, and then reserve his exceptions to those special findings, if he deems them not to be sustained by any evidence; and if he wishes to except to the conclusions of law drawn by the court from the facts found he should have them separately stated and excepted to. In this way, and in this way only, is it possible for him to review completely the action of the court below upon the merits.'"

In *Arthur C. Harvey Co.* v. *Malley,* 288 U. S. 415, this Court approved and applied the doctrine set forth in the above quotation.

In the case at bar respondent made no request for any findings of fact or for any rulings of law either during the progress of the first trial or the progress of the second trial, or even after the filing of the opinion written by the trial judge. Under the decisions of this Court in the two cases just cited, the only questions open to review under such circumstances are those arising on the pleadings. In this case, no point based upon the pleadings was presented by the assignment of errors.

III

The decision of the Circuit Court of Appeals that it has power to review the findings of the trial court to determine whether there was any evidence upon which they could be based is in direct conflict with the decision of the Circuit Court of Appeals for the Eighth Circuit in Gerlach v. Chicago R. I., etc. R. Co., 65 F. (2d) 862; and in apparent conflict with the decision of this Court in Martinton v. Fairbanks, 112 U. S. 670; and with decisions of the Circuit Courts of Appeals for the Fourth, Sixth, Eighth, and Ninth Circuits.

In the case at bar respondent took no action to present to the trial court the question whether or not there was any evidence upon which the findings made by the trial judge could be based. The Circuit Court of Appeals decided, however, that this did not prevent it from reviewing the findings of the trial court on that ground (R., 233). This decision

is in direct conflict with a recent decision of the Circuit Court of Appeals for the Eighth Circuit.

That Court, in *Gerlach* v. *Chicago R. I. etc., Co.*, 65 Fed (2d) 862, held that the sufficiency of the evidence to support the findings made by a trial judge in a suit for patent infringement tried without a jury, is a question of law which arises in the progress of the trial, and, by force of Sections 649 and 700 of the Revised Statutes is reviewable *only* when properly raised during the trial and a ruling thereon obtained which is excepted to and preserved by the bill of exceptions.

The case before the Circuit Court of Appeals for the Eighth Circuit was an action at law brought to recover damages for the alleged infringement of patents, and was tried by the court without a jury. At the close of all the evidence, the court made findings of fact and conclusions of law in favor of the defendant, and entered judgment thereon dismissing the action upon its merits. On appeal, the appellant sought to have the Circuit Court of Appeals pass upon the sufficiency of the evidence to support the findings and conclusions made. The Court of Appeals refused to do so, pointing out that by virtue of the provisions of the Revised Statutes above referred to, it had no power to consider that question in the absence of any action by the plaintiff bringing the matter before the trial court.

In the following cases other Courts of Appeals have held, in cases not involving patents, that whether

there was substantial evidence to sustain the findings of a trial judge in cases tried without a jury is a question of law arising in the progress of the trial and is reviewable only when a ruling on that specific question is obtained during the progress of the trial either by motion for judgment at the close of the testimony or by a request for a declaration of law, excepted to at the time, and duly preserved by a bill of exceptions:

Fourth Circuit—*Peoples Bank* v. *International Finance Corp.*, 30 F (2d) 46; Sixth Circuit—*Humphreys* v. *Third National Bank*, 75 Fed 852; *Cleveland etc. Coal Co.* v. *Main Island Creek Coal Co.*, 297 Fed 60; *Oyler* v. *Cleveland etc., R. Co.*, 16 F. (2d) 455; Eighth Circuit—*U. S. Fidelity etc. Co.*, v. *Board of Commissioners*, 145 Fed. 144; *Wear* v. *Imperial Window Glass Co.*, 224 Fed. 60; *United States* v. *Atchison etc. R. Co.* 270 Fed. 1; *Allen* v. *Cartan & Jeffrey Co.*, 7 F. (2d) 21; *First National Bank* v. *Litteer*, 10 F. (2d) 447; Ninth Circuit—*Gillespie* v. *Hongkong & Shanghai Banking Corp.*, 23 F. (2d) 670; *Macomber* v. *Goldthwaite*, 22 F. (2d) 638; *Phoenix Securities Co.* v. *Dittmar*, 224 Fed. 892.

This Court in *Martinton* v. *Fairbanks*, said (p. 672):

> "If the question was whether all the evidence was sufficient in law to warrant a finding for the plaintiff, he should have presented that question by a definite ruling on that point."

IV.

In deciding that testimony establishing what the alleged improvement was and how it differs in structure and operation from what was in the prior art affords no evidence upon which the trial court could base a finding of no invention, the Circuit Court of Appeals has decided an important question of patent law which has not been, but should be, settled by this Court.

The Circuit Court of Appeals held there was no evidence upon which the trial court could base a finding of no invention.

The ultimate response to the question whether a patentee has performed an inventive act must always be based upon a comparison of the alleged invention with what was in the prior art and ascertainment of the differences between them.

When facts which enable a court to make that comparison and ascertainment are fully established by evidence about which there is no dispute, a court has before it the proper basis for forming a judgment upon the issue of invention, and its decision, even though erroneous, cannot properly be characterized as unsupported by any evidence.

In the instant case, the evidence fully established the nature of the alleged improvement, the nature of the devices found in the prior art, and the differences in structure and operation between the alleged improvement and the prior art devices (R. 231).

Counsel for petitioners have been able to find no other case in which it has been held that such evidence fails to furnish a proper basis for determining the issue of invention against a patentee.

It is believed that this question of what evidence is sufficient to permit a fact finding body, whether judge or jury, to rest a decision holding a patent invalid for want of invention is one upon which it is important to have an authoritative pronouncement of this Court.

CONCLUSION

It is earnestly urged, therefore, that the petition for a writ of *certiorari* be granted.

Respectfully submitted,

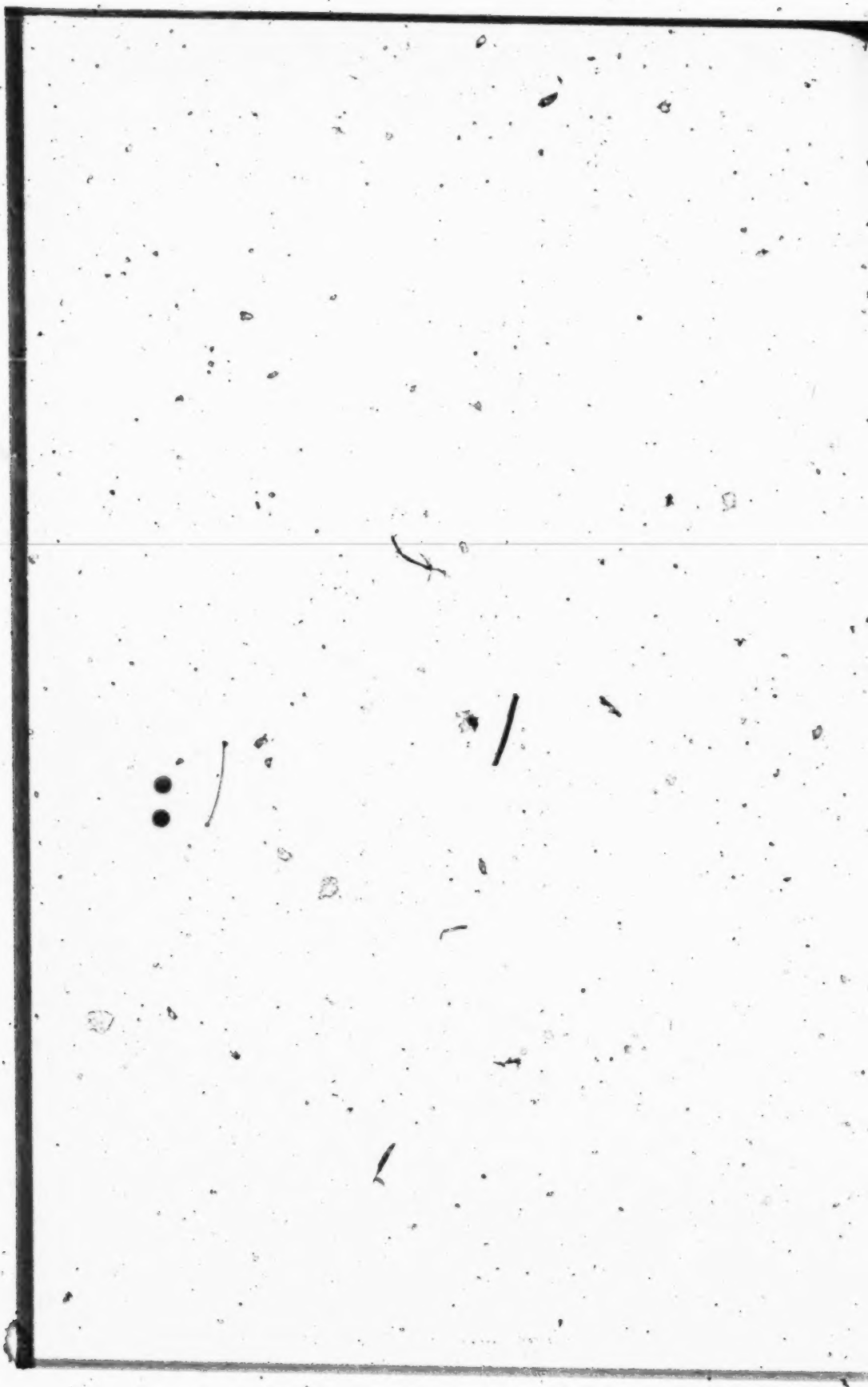
WILLIAM H. DAVIS

GEORGE E. MIDDLETON

CHARLES W. RILEY

ALLEN HUNTER WHITE

Counsel for Petitioners.



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Office Supreme Court, U. S.
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JAN 24 1934
CHARLES ELMORE CROPLEY
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IN THE

Supreme Court of the United States

OCTOBER TERM, 1933. No. 709.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC.,

Petitioners,

v.

CHARLES B. GRAY,

Respondent.

REPLY BRIEF OF PETITIONERS.

WILLIAM H. DAVIS,
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IN THE

Supreme Court of the United States

OCTOBER TERM, 1933. No. 709.

Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Petitioners,

v.

Charles B. Gray, Respondent.

IN RE CERTAIN MATTERS TOUCHED UPON IN BRIEF FOR RESPONDENT OPPOSING PETITION FOR CERTIORARI.

On page 4 of the brief filed in opposition to the petition for a writ of certiorari, counsel for respondent say:

"Nothing has been urged except that petitioner thinks the case was wrongly decided on certain technical points. It is not even argued that the case was wrongly decided on the merits and it is not now denied that petitioner wrongfully appropriated and used respondent's invention after it had been disclosed to it in good faith, and that this wrongful appropriation was made under cover of untrue statements calculated to mislead respondent into abandoning his claims."

Subsequently, on pages 7 and 8 of the same brief, counsel for respondent say in elaboration of the foregoing:

"Discussion is unnecessary to demonstrate that there is nothing of a public nature involved in this case, and we respectfully suggest to the Court, that its discretion should not be exercised in a case in which admittedly the petitioner is in the wrong, and relies solely on technical points to sustain its application to this Court. So far from contesting the decision of the Court of Appeals as to the validity of the patent, petitioner for the first time expressly concedes novelty over the prior art (Petitioner's Brief, pp. 14-15).

"As pointed out in the statement of the case, respondent in good faith disclosed his invention to petitioner, sending it a sample of his release; this was returned to respondent by petitioner with a letter (Book of Exhibits, p. 9) in which two statements are contained which two statements the record shows were untrue. The first was that the release which respondent had in-

vented was 'Identical in practically every respect with a release which' petitioner had 'been marketing for some time'; and the second was that 'we are perfecting our patents *covering this construction*.' (Italics ours.)

"The patents in question did not cover the construction of the respondent's device, and the release which petitioner was marketing was not the same nor practically the same as the Court of Appeals decided in a decision the merits of which petitioner does not now contest.

"Even if the technical questions raised were well taken (which is denied), it is respectfully submitted that the discretion of this Court should not be exercised where there is no pretense that the decision on the merits of the case was erroneous."

Counsel for petitioners believe that these statements should not be permitted to remain unchallenged.

Petitioners have not invoked the discretionary power of this Court to grant certiorari upon the ground that the decision of the Circuit Court of Appeals is against the weight of the evidence; that was recognized as a question of no general importance, however important it might be in the instant case. But the case does present important questions of federal law having application beyond the immediate case, as, for example, the scope of review committed by Congress to Circuit Courts of Appeals in actions at law for patent infringement tried by a court without the intervention of a jury (Petition, pp. 8-9).

The petition is directed entirely to those questions of broad importance.

It is disturbing to find this selection of grounds seized upon by counsel for respondent as warrant for the suggestion that this is "a case in which admittedly the petitioner is in the wrong," a case in which "there is no pretense that the decision [of the Circuit Court of Appeals] on the merits of the case was erroneous," and that the decision of the Circuit Court of Appeals is "a decision the merits of which petitioners do not now contest."

Petitioners believe that the decision of the Circuit Court of Appeals is against the weight of the evidence, and intend to urge that point under the third specification of errors assigned, if the writ of certiorari is issued (see Specification of Errors, pp. 12-13 of Petition and Brief).

It is also disturbing to find counsel for respondent bringing before this Court at this time the charge of "wrongful appropriation" of respondent's invention "under cover of untrue statements calculated to mislead respondent into abandoning his claims." To do this, they use the transparent device of stating that the petition for certiorari contains no denial of the charge. There was no occasion for any such denial. Not only is the accusation immaterial on the issues of validity and infringement, but it is a charge which neither of the courts below sustained.

The baselessness of the assertion that "petitioner for the first time expressly concedes novelty over the

prior art" will appear upon reading that part of petitioners' brief to which counsel for respondent refers to support it.

Respectfully submitted,

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GEORGE E. MIDDLETON

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Counsel for Petitioners.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1933.

No. 709.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, AND EASTMAN KODAK STORES, INC.,
Petitioners,

vs.

CHARLES B. GRAY, *Respondent.*

SUPPLEMENTAL BRIEF OF PETITIONERS.

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PRESS OF BYRON S. ADAMS, WASHINGTON, D. C.

IN THE

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SUPPLEMENTAL BRIEF OF PETITIONERS.

Counsel for Petitioners desire to supplement the list of cases cited in support of the third ground advanced for granting certiorari (Petition and Brief, p. 19), by adding the decision of the Circuit Court of Appeals for the Sixth Circuit in *General Motors Co. v. Swan Carburetor Co.*, 44 F. (2d) 24.

In that case, the Circuit Court of Appeals for the Sixth Circuit decided that findings of fact as to the scope of a patent claim, made by the trial judge in an action at law for royalties, and tried without a jury, could not be challenged on appeal as without support in the evidence, or

upon the ground that the undisputed evidence, as a matter of law, required contrary findings, in the absence of a ruling on that specific question obtained during the progress of the trial either by motion for judgment or by a request for a declaration of law, excepted to at the time and preserved for review by a bill of exceptions. In a *per curiam* opinion, the Court said:

> "Under the well-settled practice which we are very often being called upon to apply, we cannot review a finding of fact to see whether it is based on any substantial evidence; nor can we examine any question of law, unless the point was distinctly presented to the court below and ruled upon, during the progress of the trial, and unless proper exception was then taken. City of Cleveland v. Walsh (C. C. A.), 279 F. 57; Fleischmann Const. Co. v. U. S., 270 U. S. 349, 46 S. Ct. 284, 70 L. Ed. 624; Law v. U. S., 266 U. S. 494, 45 S. Ct. 175, 69 L. Ed. 401. If there were any specific questions of fact upon which defendant desired findings, it should have presented them to the court below; if it claimed that any specific finding of fact was not supported by any substantial evidence, it should have excepted specifically upon that ground; a general exceptance to a finding of fact is meaningless. The claim that the findings do not support the judgment is, of course, open on such an appeal; but that cannot avail defendant here. It is found as a fact that the structures in dispute were covered by the contract between the parties, and, as a finding of fact, this is about all that could be said in order to support a judgment for an agreed royalty. Defendant presents the case very much as if it were an equity appeal, but, when the argument is reduced to terms permissible in a law appeal, it comes to saying that, upon the undisputed facts, the court was required as a matter of law to find no liability; but this position cannot be considered by a reviewing court, unless the defendant has upon the trial proceeded by analogy to a motion for a directed verdict. If made at any time before the trial is finished—and perhaps a trial for this purpose continues until the court announces its conclusion—a request for a con-

clusion as a matter of law that there is no evidence to support a judgment would be sufficient to preserve this question for our consideration; but no such request was made, and the matter is not open here. Oyler v. Cleveland, C. C. & St. L. R. Co. (C. C. A. 6), 16 F. (2d) 455; May v. Marbury (C. C. A. 6 Apr. 7, 1930), 39 F. (2d) 438, and cases cited."

It is believed that the foregoing decision is in direct conflict with the decision of the Circuit Court of Appeals for the Third Circuit in the instant case.

Respectfully submitted,

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GEORGE E. MIDDLETON,
CHARLES W. RILEY,
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Counsel for Petitioners.

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EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC.,

Petitioners,

vs.

CHARLES B. GRAY,

Respondent.

BRIEF FOR PETITIONERS.

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EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK, and EASTMAN KODAK STORES, INC.,

Petitioners,

vs.

CHARLES B. GRAY,

Respondent.

BRIEF OF PETITIONERS.

THE JUDGMENT UNDER REVIEW.

This case is here on writ of certiorari to the United States Circuit Court of Appeals for the Third Circuit to review a judgment (R. 180) reversing a judgment of the District Court of the United States for the Eastern District of Pennsylvania in favor of defendants in a suit to recover damages for patent infringement (R. 157).

OPINIONS OF THE COURTS BELOW.

The opinion of the District Court, written by District Judge William H. Kirkpatrick, was filed July 13, 1932. It appears at page 150 of the record. It has not been reported.

The opinion of the Circuit Court of Appeals for the Third Circuit (Circuit Judges Buffington, Davis, and Thompson), written by Judge Buffington, was filed August 22, 1933. It appears at page 165 of the record and is reported in 67 F. (2d) 190.

JURISDICTION.

The jurisdiction of this Court is invoked under Section 240 (a) of the Judicial Code as amended by the act of February 13, 1925, c. 229 (28 U. S. Code, Sec. 347).

The judgment of the Circuit Court of Appeals for the Third Circuit was entered August 22, 1933 (R. 180). Thereafter a petition for rehearing was filed (R. 181) which was denied, without opinion, on October 31, 1933 (R. 203).

The petition for a writ of certiorari was filed January 8, 1934, and was granted February 5, 1934 (R. 205).

STATEMENT OF THE CASE.

Nature of the Suit.

This is an action at law brought by respondent against petitioners in the District Court of the United States for the Eastern District of Pennsylvania to recover damages for alleged infringement of patent No. 1,314,867 issued to respondent September 2, 1919, on an application filed February 7, 1918. The patent relates to a flexible power-transmitting mechanism, particularly intended for use as a cable release, a well known mechanism for actuating the shutter of a photographic camera.

The Issues Raised by the Pleadings.

The patent contains six claims (R. 206). Petitioners, by plea of the general issue and by notice of special

matters of defense, raised issues of novelty, invention, and infringement with respect to each claim (R. 13, 14, 16, 17, 18, 21). On the trial, respondent relied upon all the claims except claim 4 (R. 20).

The First Trial.

The case was first tried before a jury (R. 19). The jury returned a verdict for respondent (R. 148). Subsequently, on motion of petitioners, this verdict was set aside and a new trial was ordered (R. 149).

Stipulation Waiving Jury on Second Trial.

Following the entry of the order setting the verdict aside and ordering a new trial, the attorneys of record for the parties, by a stipulation in writing, filed with the Clerk of the District Court, agreed to waive a jury on the second trial and to submit the cause for trial and determination by the court (R. 149).

The stipulation provided for submission of the issues "upon the record already made, as if the testimony and exhibits offered in evidence at the trial before Judge Dickinson and a jury had been duly offered in evidence before the Judge who may be assigned to hear this case, subject to any objections which appear on the record." The stipulation also provided that all motions made by either party at the jury trial should be deemed made before the judge trying the case without the intervention of a jury, and that both parties should have the right of appeal as in other cases (R. 149).

Submission of Issues for Trial by the Court.

The cause came on to be heard by a judge of the District Court without a jury upon the pleadings, the evi-

dence, and the arguments and briefs of counsel. In accord with the agreement for use of the record already made, counsel for the respective parties offered in evidence the stenographic notes of testimony and minutes of proceedings taken at the first trial (R. 18, 19).

Opinion of Trial Judge Supporting Judgment for Petitioners.

The trial judge gave judgment for defendants (R. 157). The reasons therefor were stated in an opinion which dealt generally with the issues in dispute (R. 150-156). Near the end of the opinion the trial judge said (R. 155):

> "The statements of fact contained in this opinion may be taken as findings of fact."

The trial judge then proceeded to summarize his findings as follows:

> "1. The combination of closed coil inner thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together."*
>
> "2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of this patent."
>
> "3. Claims 1 and 2 are anticipated."
>
> "4. Claim 3 is not infringed."
>
> "5. Claims 5 and 6 are invalid because United States patent No. 1,297,327 to Dakin and Underwood

*It is plaintiff's claim that this combination of closed inner and open outer coils is his real contribution to the art (R. 151, 170).

antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion, '1' applies to these claims."

The opinion ended with the direction: "Judgment may be entered for the defendant" (R. 156).

Errors Assigned by Respondent on Appeal.

Respondent appealed from the judgment entered in favor of defendants and filed an assignment of errors containing five specifications (R. 158, 159). The first four specifications are directed to the first, second, third and fifth findings quoted in the preceding paragraph.* The fifth specification is addressed to the order directing the entry of judgment for the defendants. The ground of challenge to the finding or order attacked is not stated in any specification. The specifications are general, the style of each being "The learned Trial Judge erred in finding as follows:" followed by quotation of the finding or order complained of.

Respondent's Bill of Exceptions.

Respondent filed a bill of exceptions containing the evidence and minutes of the proceedings before the District Court (R. 18-150). Examination of this bill of exceptions discloses that no request or motion was made, denied, and excepted to, or any like action taken during the progress of the trial, which presented to the trial court the question whether there was support in the evidence for the findings challenged by the assignment of errors or whether the undisputed evidence required contrary findings. The fact is that respondent made no

*The fourth finding,—that claim 3 is not infringed,—was not assigned as error.

request for any findings of fact or for any rulings of law at any time, either during the first trial before the jury, or during the progress of the second trial before the court, or even after the filing of the opinion directing judgment for defendants.

The Motion to Dismiss the Appeal.

Before the appeal was heard, petitioners filed a motion to dismiss the appeal and/or to affirm the judgment (R. 161). The motion was based upon the ground that the assignment of errors presented no question reviewable by the Circuit Court of Appeals in view of the provisions of Sections 649 and 700 of the Revised Statutes (28 U. S. Code, Secs. 773, 875). Decision on the motion was postponed until final hearing (R. 164, 165).

The Decision of the Circuit Court of Appeals.

On final hearing of the appeal, the Circuit Court of Appeals rejected the contention that it had no power to review the findings challenged by the assignment of errors, and, holding that the evidence did not support the findings made by the trial judge but required contrary findings leading to the conclusion that the patent was valid and infringed (R. 177, 179), reversed the judgment entered by the District Court and granted a new trial (R. 180).

SPECIFICATION OF ERRORS.

Petitioners urge that the Circuit Court of Appeals for the Third Circuit erred in the following matters:

1. In holding that it had power to review findings challenged on appeal by respondent's assignment of errors.

2. In holding that the evidence did not support the findings challenged on appeal by respondent's assignment of errors but required contrary findings leading to the conclusion that the patent in suit was valid and infringed.

3. In reversing the judgment entered by the District Court and granting a new trial.

SUMMARY OF ARGUMENT.

In support of the contention that the judgment of the Circuit Court of Appeals for the Third Circuit should be reversed and the judgment of the District Court for the Eastern District of Pennsylvania affirmed, petitioners will urge the following points:

I. The Circuit Court of Appeals had no power to review the findings challenged by the assignment of errors.

II. The findings challenged by the assignment of errors are warranted by the evidence and support the judgment of the District Court.

ARGUMENT.

I.

THE CIRCUIT COURT OF APPEALS HAD NO POWER TO REVIEW THE FINDINGS CHALLENGED BY THE ASSIGNMENT OF ERRORS.

The decision of the Circuit Court of Appeals that it had power to review the findings challenged by respondent's assignment of errors to determine whether the evidence supported the findings or required the trial court

to find the patent valid and infringed is based upon two propositions.

The first proposition is that the findings of the trial court on the disputed issues were not findings of fact, but rulings on questions of law presented by the evidence. This holding is founded upon the view that the issues of invention, novelty, and infringement should be determined as matters of law, and not as questions of fact, where there is no conflict in the evidence introduced to show what the alleged improvement was, what was in the prior art, and what was the nature of the accused devices.

The second proposition upon which the Circuit Court of Appeals based its decision is that there is nothing in the statutes governing review in jury waived cases, or in the state of the record in this case, which prevents review of findings which embody questions of law presented by the evidence.

Petitioners contend that, whatever may be the case, with regard to the issues of anticipation and infringement, the disputed question of invention was one to be determined by the trial court as a question of fact, and not as a matter of law; and that, in any event, the Circuit Court of Appeals had no power to reverse the judgment of the District Court on the ground that the evidence did not support the challenged findings but required findings leading to the conclusion that the patent was valid and infringed, for the reason that no action was taken by respondent to present that question of law to the trial court and secure its ruling thereon during the trial, as required by Sections 649 and 700 of the Revised Statutes (28 U. S. Code, Secs. 773, 875).

The question whether the patentee's alleged improvement required mere mechanical skill or the exercise of the faculty of invention is one of fact, notwithstanding there is no conflict in the evidence introduced to show what the improvement is and how it differs from what was in the prior art.

In support of its view that the issue whether an alleged improvement required mere mechanical skill or the exercise of invention presents a question to be determined as a matter of law, and not as a question of fact, the Circuit Court of Appeals cited *Heald* v. *Rice*, 104 U. S. 737; *Market Street Railway Co.* v. *Rowley*, 155 U. S. 621; and *Singer Co.* v. *Cramer*, 192 U. S. 265.

These cases hold only that the question of *identity* may be determined as a matter of law. Thus, in *Heald* v. *Rice*, the validity of a reissued patent was challenged on the ground that the reissue patent was not for the same invention as the original patent. In *Market Street R. Co.* v. *Rowley*, the validity of the patent in suit was challenged upon the ground that the inventions and devices described in prior patents disclosed the same invention as that claimed by the patentee. In *Singer* v. *Cramer*, the question in issue was whether the Diehl device, upon which the charge of infringement was based, was substantially the same as that of Cramer.

Where *invention* is in issue, the question to be determined is not one of identity, but whether the differences between the invention and what was in the prior art were of such a character as to require for their production mere mechanical skill or the exercise of the faculty of invention. This Court has held that question to be one of fact.

In *Keyes* v. *Grant*, 118 U. S. 25, there was no dispute as to what differences existed between the furnace disclosed in the patent and the furnaces of the prior art, but this Court held that the question whether the im-

provement required mere mechanical skill or the exercise of invention was one to be decided as a question of fact.

In *Thomson Spot Welder Co.* v. *Ford Motor Co.*, 265 U. S. 445, this Court said (p. 446):

> "The question whether an improvement requires mere mechanical skill or the exercise of the faculty of invention, is one of fact; and in an action at law for infringement is to be left to the determination of the jury. *Keyes* v. *Grant*, 118 U. S. 25, 36, 37; *Holmes* v. *Truman* (C. C. A.) 67 Fed. 542, 543; *Hall* v. *Wiles* (C. C.), 2 Blatchf. 194, 11 Fed. Cas. 280, 283; *Poppenhusen* v. *Falke* (C. C.), 5 Blatchf. 46, 19 Fed. Cas. 1052, 1054; *Shuter* v. *Davis* (C. C.), 16 Fed. 564, 566; *Blessing* v. *Copper Works* (C. C.), 34 Fed. 753, 754."

The Circuit Court of Appeals had no power to reverse the judgment of the District Court on the ground that the evidence did not support the challenged findings but required findings leading to the conclusion that the patent was valid and infringed.

The statutes governing review in actions at law tried by a court without a jury, are Sections 649 and 700 of the Revised Statutes (28 U. S. Code, Secs. 773, 875). Section 649 provides:

> "Issues of fact in civil cases in any district court may be tried and determined by the court, without the intervention of a jury, whenever the parties, or their attorneys of record, agree to waive a jury by a stipulation in writing filed with the clerk or by an oral stipulation made in open court and entered in the record. The finding of the court upon the facts, which may be either general or special, shall have the same effect as the verdict of a jury."

Section 700 provides:

> "When an issue of fact in any civil cause in a district court is tried and determined by the court with-

> out the intervention of a jury, according to section six hundred and forty-nine, the rulings of the court in the progress of the trial of the cause, if excepted to at the time, and duly presented by a bill of exceptions, may be reviewed upon a writ of error or upon appeal; and when the finding is special the review may extend to the determination of the sufficiency of the facts found to support the judgment."

The effect of these statutes, as established by repeated decisions of this Court, is that when a case is tried by a court without a jury the finding of the trial court is conclusive upon all matters of fact and prevents any inquiry into any question of law presented by the evidence, unless a request or motion has been made, denied, and excepted to, or some other like action taken which distinctly presented the question of law to the trial court and secured its ruling thereon during the trial. *Arthur C. Harvey Co.* v. *Malley,* 288 U. S. 415; *Mueller Grain Co.* v. *American State Bank,* 275 U. S. 493; *Lewellyn* v. *Electric Reduction Co.,* 275 U. S. 243, 248; *Fleischmann Construction Co.* v. *United States,* 270 U. S. 349, 355-357; *Law* v. *United States,* 266 U. S. 494, 496; *Vicksburg, etc., R. Co.* v. *Anderson-Tully Co.,* 256 U. S. 408, 415; *Wilson* v. *Merchants' Loan & Trust Co.,* 183 U. S. 121, 127; *St. Louis* v. *Western Union Telegraph Co.,* 166 U. S. 388, 390; *Lehnen* v. *Dickson,* 148 U. S. 71, 73; *British Queen Mining Co.* v. *Baker Silver Mining Co.,* 139 U. S. 222; *Boardman* v. *Toffey,* 117 U. S. 271, 272; *Martinton* v. *Fairbanks,* 112 U. S. 670, 673; *Insurance Co.* v. *Sea,* 21 Wall. 158, 161; *Cooper* v. *Omohundro,* 19 Wall. 65, 69; *Insurance Co.* v. *Folsom,* 18 Wall. 237, 248, 249; *Dickinson* v. *The Planters Bank,* 16 Wall. 250, 257; *Miller* v. *Life Insurance Co.,* 12 Wall. 285, 300; *Norris* v. *Jackson,* 9 Wall. 125, 128.

Speaking for the Court in *Fleischmann Construction Co.* v. *United States,* 270 U. S. 349, Mr. Justice Sanford said (pp. 355, 356):

"And it is settled by repeated decisions, that in the absence of special findings, the general finding of the court is conclusive upon all matters of fact, and prevents any inquiry into the conclusions of law embodied therein, except in so far as the rulings during the progress of the trial were excepted to and duly preserved by bill of exceptions, as required by the statute. (Citing cases.)

* * * * * *

To obtain a review by an appellate court of the conclusions of law a party must either obtain from the trial court special findings which raise the legal propositions, or present the propositions of law to the court and obtain a ruling on them. *Norris* v. *Jackson, supra* [9 Wall. 125], 129; *Martinton* v. *Fairbanks,* supra [112 U. S. 670], 673. That is as was said in *Humphreys* v. *Third Nat. Bank,* supra [21 C. C. A. 538, 43 U. S. App. 698, 75 Fed. 852], 855, 'he should request special findings of fact by the court, framed like a special verdict of a jury, and then reserve his exceptions to those special findings, if he deems them not to be sustained by any evidence; and if he wishes to except to the conclusions of law drawn by the court from the facts found he should have them separately stated and excepted to. In this way, and in this way only, is it possible for him to review completely the action of the court below upon the merits.'"

In *Lewellyn* v. *Electric Reduction Co.,* 275 U. S. 243, Mr. Justice Stone stated the effect of the statutes under consideration as follows (p. 248):

"A trial by jury having been waived in writing, our review in this case is limited to the sufficiency of the facts specially found to support the judgment, and to the rulings excepted to and presented by the bill of exceptions, Rev. Stat. §§ 649, 700; *Fleischmann Co.* v. *United States,* 270 U. S. 349, and we are with-

out power to grant a new trial except for error thus presented. *Mueller Grain Co.* v. *American State Bank, post,* page 493, reversing 15 Fed. (2d) 899."

There is also a wealth of decisions by the various Circuit Courts of Appeals holding that appellate courts have no power, in view of the statutes referred to, to make any inquiry as to whether the evidence supports the findings of the trial court or whether the party appealing was entitled to judgment on the ground that the evidence would sustain no other conclusion, unless the point was raised in the trial court and ruled upon during the progress of the trial, and unless proper exception to the ruling was then taken. A partial list of those decisions, arranged by circuits, follows: First Circuit—*Arthur C. Harvey Co.* v. *Malley,* 60 F. (2d) 97; Fourth Circuit—*Peoples Bank* v. *International Finance Corp.,* 30 F. (2d) 46; Sixth Circuit—*General Motors Co.* v. *Swan Carburetor Co.,* 44 F. (2d) 24; *Cleveland* v. *Walsh,* 279 Fed. 57; *Humphreys* v. *Third National Bank,* 75 Fed. 852; Eighth Circuit—*Gerlach* v. *Chicago, R. I., etc., Co.,* 65 F. (2d) 862; *First National Bank* v. *Litteer,* 10 F. (2d) 447; *Allen* v. *Cartan & Jeffrey Co.,* 7 F. (2d) 21; *United States* v. *Atchison, etc., R. Co.,* 270 Fed. 1; *Wear* v. *Imperial Window Glass Co.,* 224 Fed. 60; *U. S. Fidelity, etc., Co.* v. *Board of Commissioners,* 145 Fed. 144; Ninth Circuit—*Gillespie* v. *Hongkong & Shanghai Banking Corp.,* 23 F. (2d) 670; *Macomber* v. *Goldthwaite,* 22 F. (2d) 638; *Phoenix Securities Co.* v. *Dittmar,* 224 Fed. 892; Tenth Circuit—*Davis* v. *United States,* 67 F. (2d) 737; *Greenway* v. *United States,* 67 F. (2d) 738; *White* v. *United States,* 48 F. (2d) 178.

In *Gerlach* v. *Chicago, R. I., etc., Co.,* 65 F. (2d) 862, the case before the Circuit Court of Appeals for the Eighth Circuit was an action at law brought to recover

damages for the alleged infringement of patents. The case was one tried by the court without a jury. At the close of all the evidence, the court made findings of fact and conclusions of law in favor of the defendant, and entered judgment thereon dismissing the action upon its merits. The appellant sought to have the Circuit Court of Appeals pass upon the sufficiency of the evidence to support the findings and conclusions upon which judgment was entered. Holding that it had no power to consider that question, the Court said:

> "Plaintiff made no requests for findings of fact nor conclusions of law, nor was any motion for judgment made by him at the close of the testimony, nor did he take any similar action challenging the rulings of the court. This being an action at law, tried by the court without a jury, the findings of the court upon the facts, have the same effect as the verdict of a jury. 28 U. S. C. A. § 773. The court found that plaintiff's patents were not infringed by the devices used by defendant; that there was no evidence as to the amount of damage, if any, suffered by plaintiff, and, without passing upon the validity of plaintiff's patents, dismissed his action for damages.
>
> "In the assignments of error it is charged that the court erred in making and entering each of its several findings of fact and conclusions of law and in entering judgment. There are certain general assignments to the effect that the court erred in admitting evidence of the defendant 'that was supposed to anticipate the plaintiff's patents and considered the same in the anticipatory nature when as a matter of fact the defendant had failed to comply with the statute in regard to giving proper notice that said patents were going to be used in evidence and that said court failed to consider the patents only for historical purposes and for that purpose only.'

"The assignments which refer to the rulings of the court in admitting or rejecting evidence are all of a general character, and none of them point out any specific or particular ruling of the court, nor do any of these assignments quote the substance of the evidence admitted or rejected; neither do they refer to the page of the printed record where the questioned rulings occur, and it would be impossible to determine from the assignments what particular rulings of the court are sought to be reviewed. So far, therefore, as the assignments are directed to the rulings of the court on the admission or rejection of evidence, they are wholly insufficient to present anything to this court for review. Rules 11 and 24.

"Neither is plaintiff entitled to a review of the court's findings and conclusions because he did not present to the trial court any request for special findings of fact or conclusions of law, and no demurrer challenging the sufficiency or lack of the evidence. Such being the state of the record, no question of fact or law is presented for review because 'the finding of the court upon the facts, which may be either general or special, shall have the same effect as the verdict of a jury.' 28 U. S. C. A. § 773.

* * * * * *

"In the absence of some such action bringing the matter before the trial court, this court cannot consider the sufficiency of the evidence to sustain the judgment * * *

"In this condition of the record the only inquiry open to this court is whether or not the judgment is sustained by the pleadings, findings, and conclusions. Their sufficiency for that purpose is not challenged, and could not be, as they are abundantly sufficient to sustain the judgment entered."

In *General Motors Co.* v. *Swan Carburetor Co.*, 44 F. (2d) 24, the Circuit Court of Appeals for the Sixth Circuit decided that findings of fact as to the scope of a patent claim, made by the trial judge in an action at law for royalties, and tried without a jury, could not be challenged on appeal as without support in the evidence, or upon the ground that the undisputed evidence, as a matter of law, required contrary findings, because the appellant had not secured a ruling on that specific question during the progress of the trial either by motion for judgment or by a request for a declaration of law, excepted to at the time and preserved for review by a bill of exceptions. In a *per curiam* opinion, the Court said:

> "Under the well-settled practice which we are very often being called upon to apply, we cannot review a finding of fact to see whether it is based on any substantial evidence; nor can we examine any question of law, unless the point was distinctly presented to the court below and ruled upon, during the progress of the trial, and unless proper exception was then taken. City of Cleveland v. Walsh (C. C. A.), 279 F. 57; Fleischmann Const. Co. v. U. S., 270 U. S. 349, 46 S. Ct. 284, 70 L. Ed. 624; Law v. U. S., 266 U. S. 494, 45 S. Ct. 175, 69 L. Ed. 401. If there were any specific questions of fact upon which defendant desired findings, it should have presented them to the court below; if it claimed that any specific finding of fact was not supported by any substantial evidence, it should have excepted specifically upon that ground; a general exception to a finding of fact is meaningless The claim that the findings do not support the judgment is, of course, open on such an appeal; but that cannot avail defendant here. It is found as a fact that the structures in dispute were covered by the contract between the parties, and, as a finding of fact, this is about all that could be said in order to support a judgment for an agreed royalty. Defendant

> presents the case very much as if it were an equity appeal, but, when the argument is reduced to terms permissible in a law appeal, it comes to saying that, upon the undisputed facts, the court was required as a matter of law to find no liability; but this position cannot be considered by a reviewing court, unless the defendant has upon the trial proceeded by analogy to a motion for a directed verdict. If made at any time before the trial is finished—and perhaps a trial for this purpose continues until the court announces its conclusion—a request for a conclusion as a matter of law that there is no evidence to support a judgment would be sufficient to preserve this question for our consideration; but no such request was made, and the matter is not open here. Oyler v. Cleveland, C. C. & St. L. R. Co. (C. C. A. 6), 16 F. (2d) 455; May v. Marbury (C. C. A. 6,—Apr. 7, 1930), 39 F. (2d) 438, and cases cited."

It is stated in respondent's brief opposing the petition for writ of certiorari that respondent's complaint was that the District Court had drawn erroneous conclusions and had reached a decision not in accordance with the law upon the admitted facts. Following this, it is stated that: "*proper exceptions were taken to these rulings,* * * *" (Brief of Respondent Opposing Certiorari, p. 12).

The bill of exceptions filed by respondent in the Circuit Court of Appeals (R. 18-156) contains nothing to show that respondent proposed any finding of fact or law, or that there was any insistence that the undisputed evidence compelled the trial court to hold as a matter of law that the patent was valid and infringed. The fact is that there was no challenge to the sufficiency of the evidence to support the findings made by the trial court, no request for a declaration that the patent was valid and infringed or that respondent was entitled to judgment. There was no request made by respondent

for any ruling of law at any time, either before or after the trial, and no exceptions whatever were taken.

There is in the record an order of the District Court sealing the bill of exceptions tendered by respondent. This order recites (R. 156):

> "The said counsel for the said plaintiff did then and there tender this bill of exceptions to the rulings, opinion and action of the said Court, and requested the seal of the Judge aforesaid should be put to the same, * * *".

Respondent cannot rely upon this order and the recital which it contains as showing any exceptions taken at the time to the rulings of the trial court in the progress of the trial. The most that can be said is that the order shows allowance of exceptions contained in the bill of exceptions tendered; but, as already pointed out, the bill of exceptions fails to show that any exceptions were taken to any ruling.

Even if the order and the recital could be construed as allowing exceptions to the findings challenged by respondent's assignment of errors, there could be no inquiry into the question of law sought to be reviewed. The order was not filed until twelve days after the judgment was entered and fifteen days after the trial judge filed his opinion assigning reasons for ordering judgment in favor of petitioners. It was then too late to raise the question whether the evidence required the District Court to find as a matter of law that the patent was valid and infringed. The statute (Revised Statutes, Sec. 700) extends a review to "the rulings of the court in the progress of the trial of the cause, if excepted to at the time." The trial ended in this cause when the judgment was entered for the defendants. *Arthur C. Harvey Co.* v. *Malley*, 60 F. (2d) 97; *United States* v. *Atchison, etc., R. Co.*, 270 F. 1.

In *United States* v. *Atchison, etc., R. Co.*, 270 Fed. 1, the Court of Appeals for the Eighth Circuit passed on this exact question. It was there said (p. 4):

> "Again, the trial ended in this case when, after full hearing and submission of the issues of fact and law on January 24, 1919, the court, after consideration on January 28, 1919, filed its findings of fact and its conclusion that judgment must be entered for the defendant. After that filing it was too late to take exceptions to rulings of the court on the issues tried, and no requests for findings or for modifications of findings were made by the plaintiff until subsequent to the close of the trial. Such subsequent requests and rulings thereon are, like motions for new trials after verdicts and the rulings thereon, discretionary with the trial court, and are not subject to review in the federal appellate courts."

Moreover, a bill of exceptions is not valid as to any matter which was not excepted to at the trial. *Fleischmann Construction Co.* v. *United States*, 270 U. S. 349, 357; *Insurance Co.* v. *Boon*, 95 U. S. 117, 127; *Walton* v. *The United States*, 9 Wheat. 651, 657. And a bill of exceptions cannot incorporate into the record *nunc pro tunc* as of the time when an exception should have been taken, one which in fact was not then taken. *Fleischmann Co.* v. *United States, supra; Walton* v. *United States, supra; Turner* v. *Yates*, 16 How. 14, 29.

Counsel for respondent take the position that the findings challenged by the assignment of errors are special rather than general findings, and insist that the question of law whether the undisputed evidence required the trial judge to find the patent valid and infringed was for that reason open to review, notwithstanding respondent's failure to move for judgment at the close of the evidence, or for a special declaration of law that respond-

ent was entitled to judgment, upon the ground that the evidence supported no other conclusion (Respondent's Brief Opposing Petition for Certiorari, pp. 11, 12).

The findings in question are not special findings. They are part of the opinion of the trial court, constituting a summary of the reasons moving the court to find all the issues in favor of petitioners.

In the paragraph immediately preceding the one in which these reasons are set forth, the trial court invited the parties to submit formal requests for findings, as follows (R. 155):

> "If separate findings of fact are desired the parties may submit requests in accordance herewith."

Respondent requested no special findings and none were made. It is settled that the opinion of the trial judge, dealing generally with the issues of law and fact and giving the reasons for his conclusion, is not a special finding of facts within the meaning of the statute. *Fleischmann Construction Co.* v. *United States,* 270 U. S. 349, 355; *British Queen Mining Co.* v. *Baker Silver Mining Co.,* 139 U. S. 222; *Raimond* v. *Terrebone Parish,* 132 U. S. 192, 194; *Dickinson* v. *The Planter's Bank,* 16 Wall. 250, 257; *Insurance Co.* v. *Tweed,* 7 Wall. 44, 51.

Even if the challenged findings could be regarded as special findings, respondent would not on that account be relieved of the necessity of raising the specific question of law sought to be reviewed. That necessity arises whether the findings are general or special. *Davis* v. *United States,* 67 F. (2d) 737, C. C. A. 10; *People's Bank* v. *International Finance Corp.,* 30 F. (2d) 46, C. C. A. 4; *Gillespie* v. *Hongkong & Shanghai Banking Corp.,* 23 F. (2d) 670, C. C. A. 9; *Macomber* v. *Goldthwaite,* 22 F. (2d) 638, C. C. A. 9; *Gartner* v. *Hays,* 272 Fed. 896, C. C. A. 8; *United States* v. *Atchison, etc., R. Co.,* 270 Fed. 1, C. C. A. 8. In other words where there are no

exceptions to rulings of the trial court during the progress of the trial, the only question open for review upon special findings of fact is whether the facts found support the judgment, and not whether the evidence supports the special findings. *Norris* v. *Jackson,* 9 Wall. 125; *Flanders* v. *Tweed,* 9 Wall. 425; *Miller* v. *Life Insurance Co.,* 12 Wall. 285, 300; *Insurance Co.* v. *Folsom,* 18 Wall. 237; *Booth* v. *Tiernan,* 109 U. S. 205; *Preston* v. *Prather,* 137 U. S. 604; *United States* v. *U. S. Fidelity & Guaranty Co.,* 236 U. S. 512.

Respondent did not seek to raise for review the sufficiency of the findings to sustain the judgment. In any event, it is too clear to require discussion that a judgment for defendant in a suit to recover damages for patent infringement is supported by a finding that the patent is invalid for want of invention and that it is not infringed by defendant's accused device.

It is stated in the opinion filed by the Circuit Court of Appeals that the trial was in substance "a quasi demurrer." It was stated that "no witnesses were examined", and that "there were no disputed facts" to be determined by the trial court.

These statements suggest that the Circuit Court of Appeals may have decided in favor of its power to review the challenged findings upon the ground that the cause was in effect submitted to the trial court upon an agreed statement of facts.

If the case had been submitted to the trial court upon an agreed statement of *ultimate* facts, the sufficiency of such facts to support the judgment would have been reviewable on appeal, for such an agreed statement of facts would be taken as an equivalent of a special finding of facts. *Supervisors* v. *Kennicott,* 103 U. S. 554. But as such equivalent, there must be an agreement upon *all ultimate facts,* and not merely upon collateral facts from which the ultimate facts or any of them may

be inferred. *Wilson* v. *Merchants Loan & Trust Co.*, 183 U. S. 121, 127. And, in any event, the only question open for review would be whether the ultimate facts support the judgment. (See cases cited, supra, p. 21.)

In the instant case, no *additional* witnesses were examined, but the parties offered in evidence the testimony given at the first trial. There was no conflict in the testimony with respect to certain specific collateral facts relating to the prior art, the inventions described in earlier patents, and the nature of the accused devices, but the inferences to be drawn from these auxiliary facts were the subject of dispute, and not agreement. The ultimate facts going to make up the plaintiffs' alleged cause of action and defendants' grounds of defense,—invention, novelty, and infringement,—remained for determination by the trial judge, who decided them in favor of the defendants. It is settled that under such circumstances, an appellate court must accept the findings as conclusive, and limit its inquiry to rulings of law presented by the bill of exceptions. *Wilson* v. *Merchants' Loan & Trust Co.*, 183 U. S. 121, 126-129; *Lehnen* v. *Dickson*, 148 U. S. 71.

It is submitted that the question of law which respondent sought to present by his assignment of errors was one which the Circuit Court of Appeals had no power to consider for the reason that no ruling on that specific question was secured during the progress of the trial, excepted to at the time and preserved for review by a bill of exceptions; and that the judgment in favor of defendants entered by the District Court should have been affirmed.

II.

THE FINDINGS CHALLENGED ON APPEAL ARE WARRANTED BY THE EVIDENCE.

The patent in suit (R. 206) relates to a device for actuating the shutter of a photographic camera. The device is of the type known as cable releases in which two flexible members,—an outer sheath member and an inner thrust member,—one working within the other, and terminating in movable finger pieces, are so connected to the shutter casing and an operating part as to permit the camera shutter to be actuated when the finger pieces are pressed together.

The findings made by the trial court and challenged by respondent's assignment of errors (supra, pp. 4, 5) were, in substance: (1) the cable releases defined in claims 1 and 2 of the patent were anticipated; (2) claims 1 and 2 cannot be construed in the manner urged by respondent to save them from anticipation; (3) the combination of closed coil inner thrust member and open coil outer sheath member which respondent seeks to read into claims 1 and 2 is not patentable in any case; (4) claims 5 and 6 are anticipated, and are, in any event, invalid for want of invention.

The discussion which follows is directed to these findings and to the evidence upon which they rest.

Claims 1 and 2 Are Anticipated.

Claim 1 of the patent (Pltf.'s Exh. No. 1, R. 206, 210) defines a cable release having the following elements in combination:

(a) "Two heads"—these are the two enlargements, one at the inner end of the flexible tube for attachment

to the camera and the other at the outer end of the tube forming the finger grip for the press button.

(b) "A barrel on the outer head"—this is the metal sleeve or barrel marked "A" on Fig. 1-a of the patent, which is screwed into the outer head and lies inside of the fabric tube D and surrounds the short spring marked G.

(c) "A coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel"—this is the coiled spring casing marked C that runs the whole length of the flexible tube and the outer end of which loosely surrounds and engages the reduced inner end of the sleeve or barrel A.

(d) "Flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise"—this is the fabric tube marked D.

(e) "A stem extending slidably through one of said heads and having limited outward movement"—this is the slide or push button marked F associated with the outer head.

(f) "A slide member in the other of said heads"—this is the slide member marked I on Fig. 1-b of the patent, associated with the inner head.

(g) "And means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member"—this is the coiled wire tube J which connects the stem with the slide member and transmits endwise motion from one to the other. *It will be noted that it is here claimed as an element of the patented combination without regard to its particular form,*

whether a coiled wire tube or a straight wire, so long as it connects these two slidable parts and serves to transmit endwise motion from the stem or push button at the outer head to the plunger or slide member at the inner head.

Claim 2 of the patent has the same elements as Claim 1, and in addition it has:

(h) "Yielding means for normally holding said stem at its outer limit"—this is the short coiled spring marked G on Fig. 1-a of the patent. In this claim it is also required that the means intervening between the stem and the slide member for the transmission of endwise motion shall be "joined" to the stem and to the slide member.

At the trial defendants introduced in evidence British patent to *Edwards & Watson;* No. 5,741 of 1906* (Deft.'s Exh. 18, R. 322).

In Figure 2 of this patent, which illustrates a release mechanism for photographic cameras, all of the elements of Claim 1 as well as Claim 2 of the patent in suit are disclosed in the same combination and for the same purpose, as follows:

(a) "Two heads"—the outer head constituting the finger grip of the press button and illustrated at the left hand end of the figure at A, and the inner head illustrated at the right hand end of the figure at B.

(b) "A barrel on the outer head"—this is the metal sleeve of barrel marked f on the drawing, which lies inside of the fabric tube of casing marked b, and surrounds the short spring marked a^x.

*In addition to the patent itself, a chart was submitted to the trial court in which the elements of claims 1 and 2 of the patent in suit were identified on Fig. 2 of this patent. A copy of the chart accompanies this brief.

(c) "A coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel"—this is the coiled spring marked g that runs the whole length of the fabric tube and engages the inner cup-shaped end of the sleeve or barrel f.

(d) "Flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise" —this is the fabric tube marked b.

(e) "A stem extending slidably through one of said heads and having limited outward movement"—this is the slide or push button marked k associated with the outer head.

(f) "A slide member in the other of said heads"— this is the slide member marked l associated with the inner head.

(g) "And means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member"—this is the straight twisted wire marked i which connects the stem with the slide member and transmits endwise motion from the stem at the outer head to the slide member at the inner head.

(h) "Yielding means for normally holding said stem at its outer limit"—this is the short coiled spring marked a^x.

A comparison of the cable release illustrated by Figure 2 of the *Edwards & Watson* patent with the cable releases defined by Claims 1 and 2 of the patent in suit was made by the witness Christy (R. 107-109). At the end of that comparison the following testimony was given:

"Q37. Then do you find, Mr. Christy, in this British patent to Edwards of 1906 the same elements that are claimed in claims 1 and 2 of the plaintiff's patent, arranged in the same combination, for the same purpose?

A. I do."

This evidence fully warranted the comment of the trial Judge that these claims, "if read as stated, made a combination which was clearly anticipated by the British patents" (R. 153).

The respondent did not attempt to deny that Claims 1 and 2, if read as stated, are anticipated by *Edwards & Watson*. He seeks to avoid anticipation by interpreting the words "means intervening said stem and said slide member" as though they read "a coiled wire tube intervening said stem and said slide member". This contention was answered by the trial Judge in conclusion numbered 2, discussion of which follows.

Claims 1 and 2 Cannot Be Interpreted as Calling for a Closed Coil Inner Thrust Member in View of the File Wrapper History of This Patent.

The "reasons why" the trial Judge came to this conclusion are set forth in his opinion as follows (R. 153, 154):

"These claims do not call for a coiled tube as an inner member but merely for 'means intervening * * * for the transmission of endwise motion,' and, if read as stated, made a combination which was clearly anticipated by the British patents. Only by reference to the specification can the claim be narrowed to a claim for a coiled tube inner member. The file wrapper history, however, shows that another claim (original claim 17) identical in all re-

spects with claim 1 (and substantially identical with claim 2) except for the fact that it called for a 'coiled wire tube' instead of 'means intervening' was disallowed by the examiner, as so anticipated. The plaintiff then amended by including a 'barrel' feature in both claims and claim 1 was allowed. Claim 17 was again rejected 'as not patentably distinct from claims 1 and 4 allowed.' In this action the plaintiff acquiesced.

"The case is so nearly on all fours with U. S. Repair, etc., Company v. Assyrian Asphalt, 183 U. S. 591, that the opinion in that case may be applied to this with a very little paraphrasing, thus: 'Another objection to the proposed limitation of the claim by making it read * * * ("a coiled wire tube") * * * in lieu of the unqualified word * * * ("means") * * * is the fact that the * * * ("17th") * * * claim, which contained the additional words, was withdrawn by the patentee upon a ruling or declaration of the Patent Office that the 1st and * * * ("17th") * * * claims were the same in substance and could not both be permitted to remain in the case * * *. Having voluntarily abandoned the claims for * * * ("a coiled wire tube") * * * the patentee * * * may not now insist that a broad claim containing no suggestion of such invention shall nevertheless be subjected by construction to the same restriction.'"

To establish the facts above recited regarding Gray's presentation of a claim identical with Claims 1 and 2 except for the fact that it called for a "coiled wire tube" instead of "means intervening," and his acquiescence in the rejection of the claim by the Patent Office, appellants introduced in evidence the file wrapper history of Gray's application (Deft.s' Exh. No. 1, R. 231) from which it appears:

Claim 17 in Gray's application as originally filed was in the following words (R. 245):

> "In a mechanism of the nature described, the combination of two heads, a coiled spring wire tube having spaced coils and being located between said heads, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and a coiled wire tube intervening and joined to said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described."

Under date of February 25, 1918, the examiner rejected this claim 17, and several other claims of like import, in the following words (R. 251, 252):

> "Claims 17 to 22 inclusive are rejected on the British patent to Edwards cited:* *To construct the transmission element of a coiled wire tube is not patentable* in view of—German to Wermann, 147,572, June 23, 1904, (64-30-B. M.) (1 sheet)." (Italics ours.)

The applicant did not contest this rejection, nor insist upon a claim for the subject-matter which he, and his counsel, now present as the subject-matter patented in his patent.

On the contrary, respondent amended claim 17, and the related claims rejected at the same time, by inserting in each of them a limitation to a camera release structure having *"a barrel"*, on the outer head and *engaged by the "coiled spring wire tube"* or open coil casing. He inserted after the word "heads" in the third line of the claims, the words "and engaging said barrel" (R. 255). Such a barrel was not found in the Watson

*The patent referred to is the British patent to Watson & Edwards No. 13,157 of 1905.

& Edwards British patent No. 13,157 of 1905 cited by the examiner. But such a barrel is found in the Edwards British patent No. 5,741 of 1906 (supra, p. 25).

The examiner, apparently not aware of the British patent of 1906, was willing to allow claims the patentability of which was predicated on the inclusion of the barrel in the combination claimed, such as claims 1 and 2 of the plaintiff's patent as issued. *But in allowing such claims the examiner again ruled that the use of a coiled wire tube for the "intervening means" is not patentable; and the applicant again acquiesced.* The history of this is as follows:

Claims 1 and 2 of the patent as issued are, in amended form, original claims 1 and 4 of the application as filed.

These original claims 1 and 4, with others, were rejected in the first patent office action (R. 251) on the British patent to Watson & Edwards, No. 13,157 of 1905, and the United States patent to Edwards, No. 929,573 of 1909. Neither of these patents shows the barrel on the outer head engaged by the open coil outer casing. Both of the original claims 1 and 4 defined the thrust member as they now define it—that is, broadly as "means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member."

In the first amendment the applicant amended claims 1 and 4 by inserting the words "a barrel on the outer head" in lines 2 and 3 of claims 1 and 2 as printed in the patent, and the words "and engaging said barrel" in line 5 of claims 1 and 2 as printed (R. 253). So amended, these claims became claims 1 and 2 of the patent.

The applicant said (R. 256):

> "The references do not show the barrel and the coiled wire tube engaging the barrel, as now made elements in claims 1 to 9, 11 and 12",

and

> "Claims 17 to 22, inclusive, have been amended to include the barrel and to specify that the outer spring tube engages, features not present in the references."

Thereupon the examiner, not knowing of the British patent to Edwards of 1906, and therefore erroneously supposing that a barrel engaged by the outer coiled spring wire tube was new, allowed claims 1 and 2 (then claim 4), but he said (R. 258):

> "Claims 17 to 22 are rejected as not patentably distinct from claims 1 and 4, allowed. The *use of the 'coiled wire tube' for the 'intervening means' defined in claim 1 is not patentable in view of the German patent of record.* In other words—applicant merely adds a limitation found in the prior art—to allowed claims which is not patentable." (Italics ours.)

The applicant thereupon cancelled claims 17 to 22, inclusive (R. 259).

In the District Court, and in the Circuit Court of Appeals, respondent did not dispute the facts, but contended that his acquiescence in the rejection of claim 17, wherein the phrase "a coiled wire tube" was substituted for the unqualified word "means" of claims 1 and 2, does not preclude a construction of the latter claims which would make them identical with, and give him the benefit of, the rejected claim. The contrary, however, is established by the decisions of this Court in *Morgan Envelope Co.* v. *Albany Paper Co.*, 152 U. S. 425, and *United States Repair, etc., Co.* v. *Assyrian Asphalt Co.*, 183 U. S. 591.

In the *Morgan Envelope* case suit was brought upon three separate patents granted to Oliver H. Hicks; one for a package of toilet paper; another for a toilet paper

fixture; and a third for an apparatus for holding toilet paper. The Court decided, however, that the defendants could not be held as infringers unless the patent for the toilet paper was valid. This patent set forth its claim of invention in the following language:

> "a bundle of paper consisting of one or more lengths formed into a continuous band whose internal diameter is greater than the thickness of the paper, substantially as described."

The invention in question, as described in the specification and illustrated in the drawings annexed to the patent, was for a band of paper rolled in an oval instead of the usual cylindrical shape. In the specification the patentee stated that he had in view to furnish a toilet paper in the form which would prevent wastage and said:

> "In carrying out this object I have put up one or more lengths of paper in the form of a continuous band (as contradistinguished from a roll) of oblong or oval shape, the short rounded ends of the bundle thus produced serving as guides for determining the proper points at which the paper has to be separated in order to produce sheets of a size desirable for use, and affording also the most advantageous surfaces upon which to tear the paper."

The plaintiff insisted that under the words "substantially as described" the patentee was entitled to claim a band of oval or oblong shape, and that looking at the specification and drawings in connection with the claim, it was obvious that the latter should be so limited. But the patentee's original application contained a claim for

> "a bundle of toilet paper consisting of one or more lengths of paper formed into a flexible continuous band of oblong or oval shape, the short rounded

ends of such band serving as guides for determining the proper points at which the paper is to be separated in order to produce sheets of a size desirable for use, and affording, also, the most advantageous surfaces upon which to tear the paper, substantially as described."

This claim, it will be seen, corresponded with the specification and drawings, and was Hick's real invention. The patent office rejected this claim as indefinite, because it did not point out any construction different from an ordinary paper roll, and also rejected it upon a prior patent. The patentee thereupon amended his application by changing his claim to read as above set forth. It is manifest that the claim made in the original application was narrower in scope than that substituted therefor after its rejection; but the Supreme Court held that nevertheless the patentee, having relinquished it for a broader claim, could not have the latter construed so as to give it the limited scope of the former.

Mr. Justice Brown, in delivering the opinion of the Court said (p. 429):

"It is insisted in this connection, however, that under the words 'substantially as described' the patentee is entitled to claim a band of oval or oblong shape, and that, looking at his specification and drawing in connection with the claim, it is obvious that the latter should be so limited. But the patentee having once presented his claim in that form, and the Patent Office having rejected it, and he having acquiesced in such rejection, he is, under the repeated decisions of this court, now estopped to claim the benefit of his rejected claim or such a construction of his present claim as would be equivalent thereto. *Ledgett* v. *Avery*, 101 U. S. 256; *Shephard* v. *Carrigan*, 116 U. S. 593; *Crawford* v. *Heysinger*, 123 U. S. 589, 606; *Union Metallic Cartridge Co.* v. *United States Cartridge Co.*, 112 U. S. 624.

> It is true that these were cases where the original claim was broader than the one allowed, but the principle is the same if the rejected claim be narrower."

The general rule of file wrapper estoppel was there applied to the situation presented by the instant case, where the rejected claim was narrower than the allowed claim, and plaintiff now attempts to restrict the allowed claim by reference to the words "substantially as described."

The *Assyrian Asphalt Co.* case, paraphrased by the trial judge in his opinion, involved a patent granted to secure the invention of Amos Perkins, entitled "an improved method of repairing asphalt pavements." The claim in issue was as follows:

> "1. The method of repairing asphalt pavements, which consists in subjecting the spot to be repaired to heat, adding new material and smoothing and burnishing it, substantially as described."

The specification of the patent sued upon, in describing the patentee's apparatus, stated explicitly that its burners were made "to project a flame downward against the pavement" and "to produce a blast by means of an air-pump"; and further on the mode of operation was said to be such that "a strong blast of heat is projected against the surface of the asphalt."

But in the course of the pendency of the application for the patent the applicant had been required by the patent office examiner to elect between the first claim, hereinabove quoted, and a third claim which was couched in precisely the same language except that it contained the phrase "a strong blast of heat" instead of the single word "heat" on the ground that the two claims "are the same in substance, differing only in degree, and both

cannot be permitted to remain in the case" (100 Fed. 966).

Accordingly the applicant withdrew the third claim; and the Court held that the retained first claim could not be construed to have the same meaning as the one thus abandoned.

Mr. Justice McKenna in delivering the opinion of the Supreme Court quoted with approval the following ruling of the Circuit Court of Appeals for the Seventh Circuit in the opinion delivered by Judge Woods:

> "Another objection to the proposed limitation of the claim by making it read 'a blast of heat', or 'a strong blast of heat', in lieu of the unqualified word 'heat', is in the fact that the third claim, which contained the additional words, *was withdrawn by the patentee upon a ruling or declaration of the Patent Office that the first and third claims were the same in substance and could not both be permitted to remain in the case.* That was not merely a casual expression of opinion by an examiner, but was in effect a requirement that one or the other of the claims be withdrawn, and no reason is perceived for not applying the ordinary rule. Having voluntarily abandoned the claim for a method limited to the use of 'a blast of heat', the patentee or his assignee may not now insist that a broad claim, containing no suggestion of such intention, shall nevertheless be subjected by construction to the same restriction." (Italics ours.) (P. 601.)

The Circuit Court of Appeals held that the phrases "in a mechanism of the nature described", and "substantially as described", used in claims 1 and 2, qualify the word "means" and require the claims to be construed as calling for "a coiled wire tube", the only means for transmitting endwise motion shown in the specification and patent drawing.

There is no discussion in the opinion delivered by the Circuit Court of Appeals of the decision of this Court in the *Assyrian Asphalt Case*, particularly relied upon by the trial court, nor is there any discussion of the *Morgan Envelope Case*, urged upon the Circuit Court of Appeals by petitioners as dispositive of the point under consideration.

In rejecting the conclusion of the District Court that the file wrapper history of the patent precluded such construction, the Circuit Court of Appeals merely said (R. 179, 180):

> "We limit ourselves to saying we find nothing in the proceedings in the patent office to affect the validity of Gray's claims. His original application had an undue number of claims and duplications in many cases, and these were cut down. * * * Such device was not shown in the cited prior patents and, therefore, required no modification of the claims, and these claims were never modified beyond a minor change in adding an omitted element, viz.: 'a barrel in the outer head.' "

The finding of the District Court was not based upon the idea that the cancellation of a claim which is substantially identical with an allowed claim affects the *validity* of the latter. It was based upon the view that the restriction to a "coiled wire tube" which appeared in cancelled claim 17 cannot be read into the allowed claims which do not mention any such restriction.

> *The combination of a closed coil inner thrust member and open coil outer sheath is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together.*

The idea of making the outer sheath member and the inner thrust member of cable releases of coiled wire

tubes is disclosed in the earliest patents for cable releases. The earliest of all the patents in evidence, the German patent to Wermann, of 1902, shows both the thrust member and the sheath constructed in this fashion (R. 332).

The claim is made for the patentee, however, that he first invented the combination of a closed coil wire tube for the thrust member and an open coil wire tube for the sheath. By a closed coil is meant one in which the spirals are in contact throughout so that the whole is incompressible lengthwise. In an open coil the adjacent spirals are spaced. It is urged that this combination of closed inner and open outer coils is the essence of Gray's invention, and his real contribution to the art (Gray, q. 33, 90, R. 30, 40; Mr. White, R. 44, 45).

The use of closed coil wire thrust members in cable releases for the purpose of obtaining greater flexibility was proposed by Wermann and the structure was clearly illustrated and described in his German patent No. 147,572, May 28, 1902 (R. 332). A similar disclosure is found in the Dakin U. S. patent No. 1,297,327, filed October 15, 1917, prior to Gray's application (R. 298), and releases substantially as illustrated in the Dakin patent were made by the Eastman Kodak Co. prior to Gray's application (R. 100).

The specification of Edwards' British patent No 13,157 expressly recognizes that an open coil outer member is an old feature of photographic cable releases and had been used before in combination with an incompressible inner member (R. 302).

The use of open coil outer sheath members in cable releases for the purpose of attaining greater flexibility was proposed by Edwards, and the structure illustrated is described in his British patents, Watson & Edwards No. 13,157 of 1905; Edwards & Watson No. 15,645 of 1905; and Edwards & Watson No. 5,741 of 1906 (R. 302,

309, 322). Large quantities of cable releases made in accordance with the disclosure of Figs. 1 and 2 of Edwards & Watson No. 5,741 of 1906 were sold in this country years before Gray's application (R. 105).

The question is thus presented whether an assembly of two selected elements, both old and well known, required the exercise of the faculty of invention. On this point the trial court said:

> "Taking the question in its broadest aspect and assuming, as the plaintiff contends, that all the claims (including 1 and 2) can be so construed as to include the combination which he says constitutes his real invention, I am satisfied that it amounts to nothing more than an assembly of two selected elements, neither of them new, without any new joint function, and hence is unpatentable. Of course, they cooperate and whoever first combined a flexible inner thrust member with a flexible outer sheath in a cable release may have produced a real invention, but when that had been done, and especially after coiled wire tubes had been evolved for both members, the selection of superior forms of coils from the prior art produced no new result as the product of the combination. Whatever advance there may have been was simply an aggregate of several results, each the complete result of one of the combined elements. The principle is too well established to require citation of authority."

The position of the trial judge on this point is amply supported by authority: *Hailes* v. *Van Wormer,* 20 Wall. 353; *Concrete Appliances Co.* v. *Gomery,* 269 U. S. 177; *Grinnell Washing Machine Co.* v. *Johnson Co.,* 247 U. S. 426; *Richards* v. *Chase Elevator Co.,* 158 U. S. 299; 159 U. S. 477; *Duer* v. *Corbin Lock Co.,* 149 U. S. 216; *Pope Mfg. Co.* v. *Gormully,* 144 U. S. 254; *Busell Trimmer* v. *Stevens,* 137 U. S. 423; *Holland* v. *Shipley,*

127 U. S. 396; *Pickering* v. *McCullough*, 104 U. S. 310. The latest pronouncement of this Court on this subject is found in *Electric Cable Joint Co.* v. *Brooklyn Edison Co.*, decided April 2, 1934.

The reasons advanced by the Circuit Court of Appeals for arriving at a different conclusion may be summarized as follows:

(a) Gray's device is superior to other types of cable releases (R. 174);

(b) In the Gray release there is a different co-action between the closed coil inner thrust member and the open coil sheath member from that which is obtained between the outer and inner coils of earlier flexible releases (R. 176);

(c) All attempts of earlier workers in the field to produce a satisfactory cable release had met with failure (R. 167-170);

(d) The presumption of invention arising from the grant of the patent (R. 174);

(e) The adoption of Gray's device by petitioners after Gray had shown them the structure (R. 176).

(f) The contention of lack of invention was an afterthought with petitioners (R. 172).

The fact that a more satisfactory release is obtained by using a closed coil inner thrust member and an open coil outer sheath member cannot be given weight in determining the question of invention, where the satisfactory result obtained is merely the sum of the results flowing from the use of each element separately. A superior result is not a new result in the patentable sense.

In practically every case in which this Court has held a device unpatentable on the ground that it was an aggregation, the superior utility has been urged without effect. In *Grinnell Washing Machine Co.* v. *E. E. Johnson Co.*, 247 U. S. 426, 434, this Court said:

> "Phillips may have produced a more convenient and economical mechanism than others who preceded him, but superiority does not make an aggregation patentable."

The idea that in Gray's release there is a different co-action between the closed coil inner thrust member and the open coil sheath member from that which is obtained between the outer and inner coils of earlier flexible releases does not rest upon any evidence in the record. On the contrary, the evidence (Wermann's German patent, R. 332; Dakin & Underwood's U. S. patent, R. 298) fully supports the following statement made on that point by the trial court (R. 152):

> "However, his [Gray's] closed coil thrust member still transmitted power in exactly the same way in which it did in the Wermann patent and the Dakin & Underwood patent, and the fact that it was enclosed in an open coil instead of a closed coil did not change its mode of operation. The open coil sheath member flexed in precisely the same manner as in the various British patents which disclose its use, and it would do so whether the thrust member were a coiled tube, a stranded wire, or a plain wire. I am unable to see how the advantages of the particular types selected by the plaintiff for each of these members are enhanced or in any way affected by the character of the other member, or to find anything new in the functional relationship between them."

The statements found in the opinion of the Circuit Court of Appeals to the effect that earlier workers had failed to produce a satisfactory cable release (R. 166-170) and that "up to 1917 * * * a great company like Eastman, with its skilled engineers, continued to use the rubber bulb with the pneumatic push" (R. 169) are without the slightest support in the evidence.

Large quantities of cable releases made in accordance with the disclosures of the Edwards and Watson English patent No. 5,741 of 1906, were imported and sold in this country from 1907 to 1914 (R. 105).

Shutter actuating devices of the cable release type have been made and sold in large quantities by Eastman Kodak Company continuously since before 1913 (R. 100, 106).

If it were permissible to characterize these devices as failures, Gray's device could properly be called a failure the moment a superior cable release appeared.

Nor is it true, as stated in the opinion of the Circuit Court of Appeals (R. 173), that the Eastman Company ceased making other types of shutter actuating devices after Gray's device was sent to it and examined. The undisputed testimony is that the manufacture of other types of cable releases continues today (See Physical Exhibits).

In any event, the argument based upon these inaccurate statements merely comes to saying that a cable release with a closed coil inner thrust member and an open coil outer sheath member gives a more satisfactory performance than the devices shown in earlier patents. The validity of this argument has been discussed above.

The opinion of the Circuit Court of Appeals contains the remarkable statement that the question whether the substitution of a coiled wire tube as the inner thrust member element of a cable release having an open coil outer sheath member involved invention was decided in

favor of the patentee by the Patent Office, and the further statement that "the trial judge failed to give due weight to the presumption of invention arising from the grant of the patent" (R. 174).

We have hitherto pointed out that the Patent Office, far from holding that that substitution involved invention, expressly held that the use of a coiled wire tube for the intervening means is not patentable and rejected claim 17 which claimed what the Circuit Court of Appeals now holds to be Gray's invention (*supra*, pp. 29, 31; R. 251, 252, 258).

Whether Eastman Kodak Company first obtained knowledge of or made the accused releases after learning of Gray's activities is immaterial on the question of invention. It happens, however, that the Eastman Company did not derive knowledge of the accused releases from Gray.

The Eastman Company was fully aware of the advantages and had planned the production of a release embodying both a coiled wire thrust member and a spaced coil outer casing and had made a drawing showing them in combination before it had ever heard of Gray or of his cable release.

On June 21, 1918, one Joseph Knafft, acting for Gray, wrote a letter to Mr. H. M. Fell of the Eastman Company (Pltf.'s Exh. 4, R. 212) calling attention to a cable release said to be more flexible than those then in use, and on July 2, 1918, he sent to Fell (Pltf.'s Exh. 8, R. 214) a model of the release in question. As this was Gray's first approach, it was not until July 3, 1918, that the Eastman Company had any knowledge whatever of Gray and his release. We shall now review briefly Eastman's work in the development of its present release prior to that time.

In 1913 the Eastman Company was equipping its cameras with cable releases in which the thrust mem-

ber was in the form of stranded wire cable and the outer member or casing in the form of a tightly wound coil (R. 106). A drawing of this early type of releases was received in evidence (Deft.'s Exh. 16, R. 285).

On December 24, 1915, Mr. J. A. Robertson, then superintendent of the Eastman Camera Works wrote a letter to Mr. C. L. Jenks, head of the Patent Department (Deft.'s Exh. 12, R. 282) transmitting a sample of a new type of release "in which the push cable is made of wound spiral coils, the same as the casing. This is much more flexible than the cable we have in use. The suggestion came from one of our employees, Ed. Dakin on August 31, 1915". On October 15, 1917, an application for a U. S. patent disclosing this release was filed in the name of E. W. Dakin and E. E. Underwood, this application maturing as Patent No. 1,297,327 (Deft.'s Exh. 13, R. 298) on March 18, 1919, and is the Dakin patent referred to before in this brief. On July 19, 1917, instructions in the form of a "pink slip" or note No. 91 (R. 89), were issued by the Production Manager to the manufacturing departments notifying them that a "new model cable release has been designed using a wire wound cable" and on August 13, 1917, another "pink note," No. 91a (R. 89) was issued specifying the orders in which this change was to become effective. There can, therefore, be no doubt that as early as 1915 the Eastman Company was aware of the advantages of a coiled wire thrust member and that by the summer of 1917 releases embodying this type of thrust member were in production.

On April 12, 1916, Mr. Robertson again wrote Mr. Jenks (Deft.s' Exh. 11, R. 281) enclosing a sample release "having an open flexible spring (outer casing) instead of a close wound one" and asking that Mr. Jenks get the opinion of the company's British patent solicitor, Mr. J. T. Clarke, as to whether the releases provided with that form of casing could be exported to Europe.

Mr. Clarke reported that this release if sold in England would infringe one of the Edwards British patents (Perrins, R. 102). On April 27, 1918, a "pink slip," No. 333 (R. 90, 91) was issued by the Production Department notifying the manufacturing departments of "changes being made in all of the spring casings used in our cable releases, some being open wound instead of close wound as at present. New part lists are being written * * * to be used on all local orders for releases, the present lists being reserved for London orders only until June 26, 1919, when we can safely ship the new releases to Europe without infringing on English patents. Great care must be exercised to see that any releases shipped to Europe before the date above mentioned have a close wound casing. Change takes effect on all new orders in the works."

Thus, as early as May 14, 1918, six weeks before Gray submitted his sample release to the Eastman Company, "pink slips" had been issued by the Production Department ordering these two changes in cable release construction (1) the substitution of a coiled wire thrust member for the old stranded wire cable ("pink slips," 91 and 91a) and (2) the substitution of a spaced coil casing for the tightly wound casing on all domestic orders ("pink slip," 333).

If further proof were required that the Eastman Company had contemplated the manufacture of releases embodying both the coiled wire thrust member and the spaced coil casing it may be found in Camera Works drawing No. 15,132, dated May 14, 1918 (Deft.s' Exh., R. 273) and checked by J. E. Seigfried (R. 86). The original of this drawing which plaintiff offered in evidence (Pltf.'s Exh. 44, R. 230) was changed in later years in accordance with the practice of the Drafting Department, but the photostat which defendant offered in evidence (Deft.s' Exh. 4, R. 273) is the original photo-

graphic record of the drawing before those changes were made.

In the opinion delivered by the Circuit Court of Appeals, the following statement is made (R. 172):

> "the contention of lack of invention was evidently an afterthought, for at the first trial no such contention was made. In that regard, at the jury trial, the Judge stated to the jury: 'I have called your attention to these three elements—invention, utility; novelty. Invention, as I understand it, is not in real controversy here. So you need not trouble yourselves about it.'"

The issue of lack of invention was duly raised at the first trial by defendant's points for charge, numbered 19, 20, 22, 24, 25 and 27 (R. 142, 143, 144). The quoted remarks of the trial judge in charging the jury were taken as a denial of these requests and exceptions thereto were taken by defendants in accordance with his statement at the end of the general charge that the points submitted were disaffirmed so far as not affirmed in the general charge (R. 131). As a matter of fact, the withdrawal of the issue of invention by the trial court was vigorously urged as a reason why the verdict rendered by the jury should be set aside.

Claims 5 and 6 Are Invalid Because United States Patent No. 1,297,327 to Dakin and Underwood Antedating the Plaintiff's Application Discloses the Method of Attaching the Thrust Member to the Stem Claimed, and Conclusion "1" Applies to These Claims.

Claims 5 and 6 are predicated upon the way in which the stem and slide member, respectively, are connected to the ends of the coiled wire thrust member. Claim 5

is exactly like the rejected claim 17 except for the added words "and adjustably joined" in the twelfth line of the claim. Claim 6 is exactly like the rejected claim 17 except for the words "and threaded to" in the twelfth line of that claim. Referring to the connection defined in this claim, the plaintiff himself said: "That was only a minor feature of the machine"; "only a side issue" (Gray, R. 56, 57).

It is charged that the connection of the stem and of the slide member to the coiled wire cable in defendants' structures infringes these claims. In discussing this issue, the trial judge said:

> "The patent to Dakin and Underwood shows a method of joining the thrust member to the stem which is substantially the same as that of the alleged infringing device."

The patent referred to is United States patent No. 1,297,327 (Deft.s' Exh. 18, R. 298). It concededly antedates Gray. Hence, claims 5 and 6 are anticipated if construed to cover the alleged infringing devices. If the means of connection in appellees' devices is not an adjustable or threaded connection within the meaning of claims 5 and 6, the claims are not infringed.

The method of joining the thrust member to the stem employed in the accused structure is shown by an X-ray photograph (Deft.s' Exh. 17, R. 286). Examination of this photograph shows the sleeve or tip is fixed by a prick punch in exactly the way described by the Dakin patent. The manner in which the thrust member is joined to the stem at the Eastman factory is detailed in the record (Christy, R. 112, 113).

Appellees at the trial also submitted in evidence United States patent to Duryea No. 1,072,439 (Deft.s' Exh. 18, R. 294) which shows at 10 and 11 on Fig. 2 a screw threaded, adjustable, connection for connecting the two

ends of the thrust member to the handle lever 6 at one end and to the associated member 8 at the other end.

British patent to Edwards and Watson, No. 15,645 of 1905 (Deft.s' Exh. 18, R. 309) also discloses the way in which the stem and slide member are secured to the intervening coiled wire tube in Eastman's devices. That patent says, at page 1, lines 17 to 24, inclusive, and again at page 4, lines 10 to 17, inclusive:

> "The innermost member may be formed of one or more wire or wires of stranded wires or of wires held together by wire coiled around them or a closely coiled spiral and is attached at one end to a push button or push piece—for example passed at one end into the sleeve or shank thereof and there secured by compressing or denting said sleeve at one or more points—this push button or push piece being adapted to slide within or otherwise operate in conjunction with the first named sleeve to which the outermost member is attached as aforesaid."

In disposing of respondent's argument that Dakin and Underwood did not anticipate claims 5 and 6, the trial judge said (R. 155):

> "The argument made by the plaintiff that the two prick points disclosed in the Dakin drawing deform the coils of the thrust member and prevent it from being screwed out is without support in the record, and the fact that Dakin uses the word 'fixed' in describing his method of attachment does not necessarily mean that the stem is so fixed that it cannot be unscrewed. The connection of the infringing device is a single prick point and it is rather hard to see from an X-ray photograph to what extent it deforms the coils of the thrust member if at all, but, taking the substance of the matter, that type of connection is clearly disclosed by Dakin."

What has been said above regarding the unpatentable nature of the assembly of a closed coil inner thrust member and an open coil outer sheath member renders unnecessary any discussion of the further conclusion of the trial judge that Claims 5 and 6, in any event, define a mere aggregation, and are for that reason invalid.

CONCLUSION.

It is therefore respectfully submitted that the Circuit Court of Appeals had no power to review the findings challenged by respondent's assignment of errors; that the conclusions challenged by the assignment of errors were warranted by the evidence; that the judgment entered by the District Court is supported by the facts found by the trial judge; and that the judgment of the Circuit Court of Appeals for the Third Circuit should be reversed and the judgment of the District Court affirmed.

Respectfully submitted,

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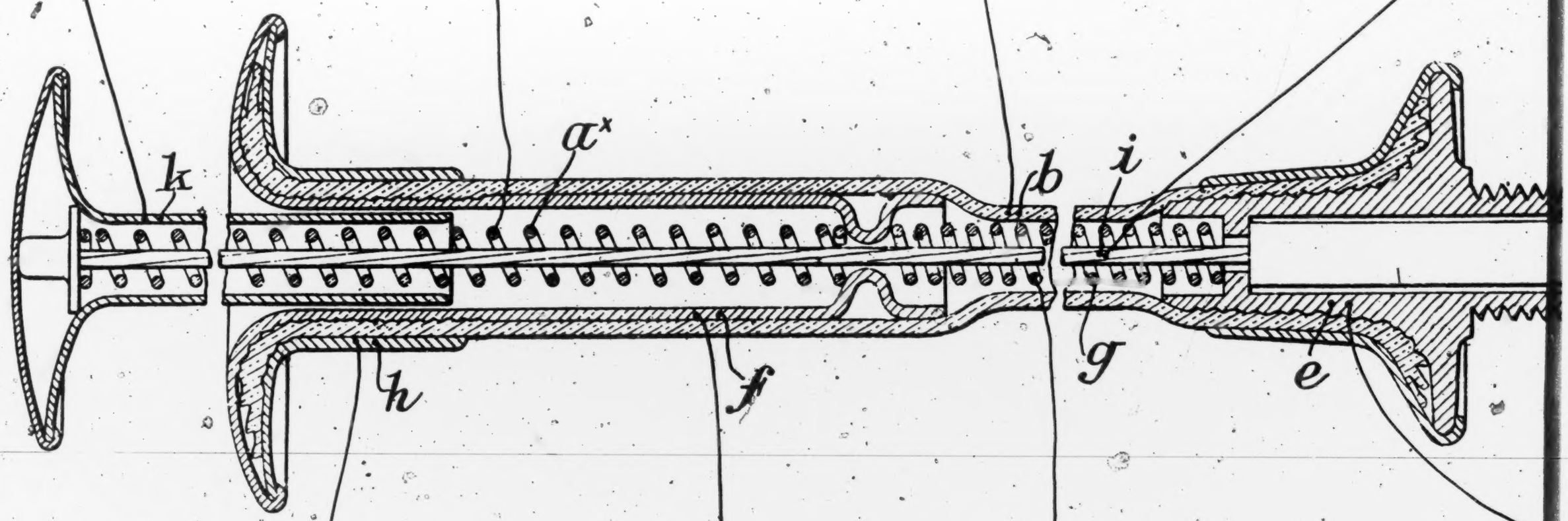
FIG. 3 OF EDWARDS & WATSON BRITISH PATENT
NO. 5,741 of 1906,
With Elements of Gray's Claims 1 & 2 Applied to
Corresponding Parts.

(5) The stem (k) extending slidably through one of said heads and having limited outward movement

(8) Yielding means (a^x) for normally holding said stem at its outer limit

(4) Flexible means (b) joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise

(7)

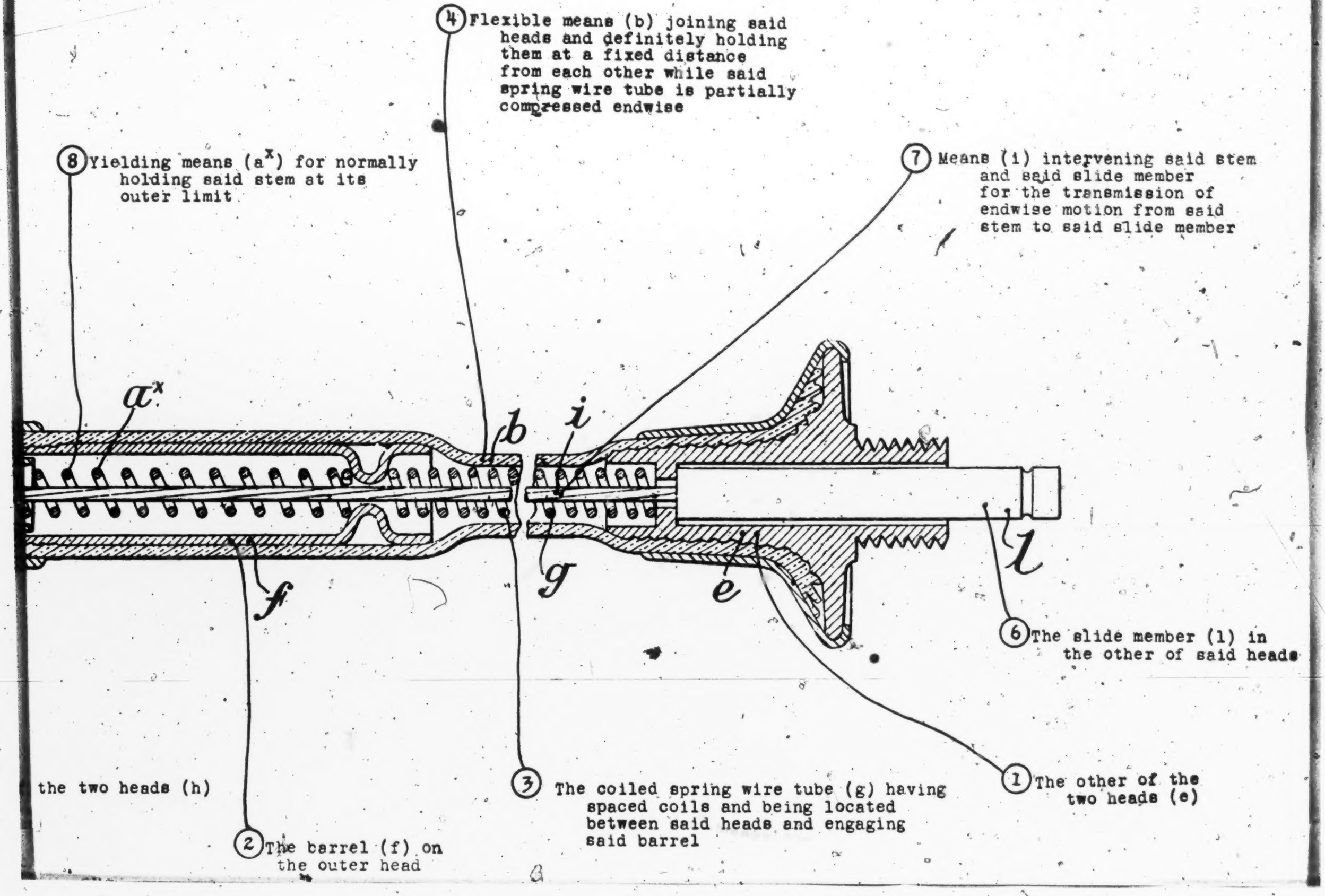


(1) One of the two heads (h)

(2) The barrel (f) on the outer head

(3) The coiled spring wire tube (g) ha spaced coils and being located between said heads and engaging said barrel

NO. 5,741 of 1906,
With Elements of Gray's Claims 1 & 2 Applied to Corresponding Parts.



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IN THE

Supreme Court of the United States.

October Term, 1933. No. 709.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK AND EASTMAN KODAK STORES, INC.,

Petitioners,

v.

CHARLES B. GRAY,

Respondent.

BRIEF FOR RESPONDENT IN OPPOSITION TO PETITION FOR WRIT OF CERTIORARI.

I. STATEMENT OF THE CASE.

This was an action at law to recover damages for infringement of a patent covering a "power transmitting mechanism" or "cable release" for actuating the shutter of a camera. Respondent's invention consisted in enclosing a small closely coiled spring within a slightly larger open coiled spring surrounded by a cloth jacket, the whole forming a combination which, while capable of transmitting power by a thrust on the inner spring, was perfectly flexible and a great advance over any previous release.

After applying for a patent but before any action by the Patent Office, respondent disclosed his invention to peti-

tioner and sent it a sample of his release. The sample was returned by petitioner in a dismantled condition, with a letter in which the statement was made that the release was identical in practically every respect with the release which the petitioner had been marketing for some time, and that the petitioner was perfecting patents to cover its construction (Book of Exhibits, p. 9).

Both of these statements were incorrect. The type of release which petitioner was then manufacturing was quite different from that of respondent, and admittedly less useful. The patent application then being prosecuted by petitioner did not cover respondent's construction.

Respondent proceeded with his patent application and Patent No. 1,314,867 was duly granted. Within a year after his disclosure to petitioner, respondent discovered that petitioner was using the device covered by his patent and it is admitted that at or about that time petitioner discarded other forms of release, including that covered by its most recent patents, and has since manufactured releases of the type covered by respondent's patent in large quantities, to the exclusion of substantially all others.

Petitioner admitted infringement but alleged respondent's patent was invalid.

The case was tried before a jury, resulting in a verdict in favor of respondent. Thereafter, the Trial Judge on motion of petitioner set the verdict aside, on the ground that he found his instructions to have been inadequate (R. 196).

The facts so far as related to the question of the validity of the patent being entirely undisputed, and in order to avoid the expense of a retrial of the case, respondent agreed with petitioner that the case might be submitted to a Judge

of the District Court on the record already made for his decision on the questions involved (R. 197).

Pursuant to this arrangement, the parties argued the case on the record already made before a Judge of the District Court other than the one who had tried the case. In due course the said Judge rendered his opinion, in which he made certain statements of fact (which he said "might be taken as findings of fact" (R. 204) not excepted to by either party, and reached five conclusions of law based on these facts, holding in effect that respondent's patent was invalid, and directed that judgment should be entered in favor of petitioner (R. 205).

Respondent sealed a bill of exceptions to the said conclusions of the court and to its order entering judgment in favor of the petitioner, and thereupon took an appeal to the Court of Appeals for the Third Circuit, which reversed the judgment, held respondent's patent to be valid and infringed, and directed that the case be returned to the court below in order that damages might be assessed.

Petitioner filed a petition for a rehearing, reiterating at considerable length technical objections raised by a previously filed and overruled motion to dismiss the case, which petition for rehearing was in due course refused. Petitioner thereupon filed its petition with this Court.

SUMMARY OF ARGUMENT.

It is respectfully submitted that the petition should be dismissed.

1. No final judgment has been rendered in the Court below. The Court of Appeals decided that the case should be sent back to the District Court for the assessment of damages. No damages have as yet been assessed. When assessed, they may be so reasonable in amount that petitioner will not find it desirable to carry the case further.

2. No reason has been alleged in the petition which should lead this Court to exercise its discretionary power and to assume jurisdiction of this case. There is no decision by any other court on the same matter. No constitutional question is raised. No question of public importance is involved. Nothing has been urged except that petitioner thinks the case was wrongly decided on certain technical points. It is not even argued that the case was wrongly decided on the merits and it is not now denied that petitioner wrongfully appropriated and used respondent's invention after it had been disclosed to it in good faith, and that this wrongful appropriation was made under cover of untrue statements calculated to mislead respondent into abandoning his claims.

3. The contention of petitioner, that the Court of Appeals on the record before it could not correct the errors of the court below, is without foundation either in fact or law.

ARGUMENT.

1. No Final Judgment Has Been Rendered in the Court Below. The Court of Appeals Decided That the Case Should Be Sent Back to the District Court for the Assessment of Damages. No Damages Have as Yet Been Assessed. When Assessed, They May Be so Reasonable in Amount That Petitioner Will Not Find It Desirable to Carry the Case Further.

This Court has held that where there is no final judgment in the court below, it will not ordinarily assume jurisdiction of the case.

In *American Construction Company v. Jacksonville, Tampa and Key West Railway Co.*, 148 U. S. 372, this Court said (p. 384):

> ". . . Clearly, therefore, this court should not issue a writ of *certiorari* to review a decree of the Circuit Court of Appeals on appeal from an interlocutory order, unless it is necessary to prevent extraordinary inconvenience and embarrassment in the conduct of the cause."

There is nothing to indicate that there would be any extraordinary inconvenience and embarrassment in the conduct of this cause if this Court should at this time decline to allow the record to be brought before it for review.

In *Forsyth v. Hammond*, 166 U. S. 506, this Court said (p. 514):

> "We have declined to issue writs of certiorari in cases where, there being only a matter of private inter-

est, there had been no final judgment in the Court of Appeals. . . ."

In *Hamilton-Brown Shoe Co. v. Wolf Brothers & Co.*, 240 U. S. 251, in which the case, as in the present one, had been sent back to the court below for the assessment of damages, this Court said (p. 258):

> "The decree that was sought to be reviewed by certiorari at complainant's instance was not a final one, a fact that of itself alone furnished sufficient ground for the denial of the application; . . . "

This case is peculiarly one in which this rule should be applied. The petitioner has not as yet been damaged at all. The damages when assessed may be fixed at such a sum that no appeal will be taken by petitioner and this Court will thus be spared the labor of considering the case.

2. No Reason Has Been Alleged in the Petition Which Should Lead This Court to Exercise Its Discretionary Power and to Assume Jurisdiction of This Case. There Is No Decision by Any Other Court on the Same Matter. No Constitutional Question Is Raised. No Question of Public Importance Is Involved. Nothing Has Been Urged Except That Petitioner Thinks the Case Was Wrongly Decided on Certain Technical Points. It Is Not Even Argued That the Case Was Wrongly Decided on the Merits, and It Is Not Now Denied That Petitioner Wrongfully Appropriated and Used Respondent's Invention After It Had Been Disclosed to It in Good Faith, and That This Wrongful Appropriation Was Made Under Cover of Untrue Statements Calculated to Mislead Respondent Into Abandoning His Claims.

Discussion is unnecessary to demonstrate that there is nothing of a public nature involved in this case, and we respectfully suggest to the Court, that its discretion should not be exercised in a case in which admittedly the petitioner is in the wrong, and relies solely on technical points to sustain its application to this Court. So far from contesting the decision of the Court of Appeals as to the validity of the patent, petitioner for the first time expressly concedes novelty over the prior art (Petitioner's Brief, pp. 14-15).

As pointed out in the statement of the case, respondent in good faith disclosed his invention to petitioner, sending it a sample of his release; this was returned to respondent by petitioner with a letter (Book of Exhibits, p. 9) in which two statements are contained which the record shows were untrue. The first was that the release which respondent had invented was "identical in practically every respect with a

release which petitioner had "been marketing for sometime"; and the second was that "we are perfecting our patents *covering this construction*": (Italics ours.)

The patents in question did not cover the construction of the respondent's device, and the release which petitioner was marketing was not the same nor practically the same as the Court of Appeals decided in a decision the merits of which petitioner does not now contest.

Even if the technical questions raised were well taken (which is denied), it is respectfully submitted that the discretion of this Court should not be exercised where there is no pretense that the decision on the merits of the case was erroneous.

That the averments made in this petition are not such as to justify the granting of the certiorari under the previous decisions of this Court is clear. We refer the Court to the following cases where the matter has been discussed:

American Construction Co. v. Jacksonville, Tampa & Key West Railway Co., 148 U. S. 372, 384-386;

Layne & Bowler Corp. v. Western Well Works, Inc., et al., 261 U. S. 387;

Magnum Import Co., Inc. v. Coty, 262 U. S. 159;

Southern Power Co. v. North Carolina Public Service Co., 263 U. S. 508;

Keller, et al. v. Adams-Campbell Co., Inc., et al., 264 U. S. 314.

6. The Contention of Petitioner, That the Court of Appeals on the Record Before It Could Not Correct the Errors of the Court Below, Is Without Foundation Either in Law or Fact.

In dealing with this portion of petitioner's argument, we shall take each contention as advanced in its argument and briefly reply to the same.

(a) The first point (Petitioner's Brief, p. 13) is that the Court of Appeals erroneously held that whether invention or mere mechanical skill had been exercised by respondent in devising the release covered by his patent was a matter of law, which the Court could determine, there being no dispute as to the facts.

The decision of the Circuit Court of Appeals holding it had the right in this case to review the question of invention as a matter of law, instead of being out of harmony with any decisions of this Court, is in full accord with the principles laid down by this Court not only in the cases referred to by the Circuit Court of Appeals but in other cases as well, as in *Mahn v. Harwood,* 112 U. S. 354, 358, in which this Court held that whether the thing patented amounts to a patentable invention is a question of law. Probably the latest pronouncement by this Court of the principle involved is in *Sanitary Refrigerator Co. v. Winters,* 280 U. S. 30, 36, in which it was held that the question of infringement, which is more akin to a question of fact than is the question of invention, upon the undisputed evidence resolves itself into a question of law.

The principle followed by the Circuit Court of Appeals in this case has been generally approved by other Circuit Courts of Appeal, as in *Prepayment Car Sales Co. v.*

Orange County Traction Co., 221 Fed. 939 (C. C. A. 2d Circuit); *Brothers v. Lidgerwood Mfg. Co.*, 223 Fed. 359 (C. C. A. 2d Circuit); *Automatic Pencil Sharpener Co. v. Boston Pencil Points Co.*, 279 Fed. 40 (C. C. A. 1st Circuit); *Burroughs Adding Machine Co. v. Rockford Milling Machine Co.*, 292 Fed. 550 (C. C. A. 7th Circuit); *E. G. Budd Mfg. Co. v. C. R. Wilson Body Co.*, 21 Fed. (2d) 803 (C. C. A. 6th Circuit).

The effort of petitioner to distinguish certain of the cases cited by the Court below on the ground that they relate to questions of identity of patents or infringement rather than to questions of invention or anticipation, cannot succeed. The nature of the function of the Court in reaching a conclusion upon any of these issues, where the facts are known and admitted, is essentially the same. The quotation in Petitioner's Brief, page 15, from *Thompson Spot Welder Co. v. Ford Motor Co.*, 265 U. S. 445, is quite beside the point when applied to this case. *Of course,* whether an improvement requires mechanical skill or the exercise of the faculty of invention involves questions of fact in the first instance and so continues where there are disputed questions of fact as there were in both of the cases cited by petitioner. But where the facts regarding the matter are all admitted and the only function of the Court is to draw conclusions, the question becomes one of law as has been repeatedly determined in the cases above cited. In this connection, the Circuit Court of Appeals said (R. 219-220):

> "In substance, the trial was a quasi-demurrer. No witnesses were examined. On final hearing neither party asked for any special findings of fact, for there were no disputed facts. The trial Judge holding the patent did not involve invention, directed 'judgment may be entered for the defendant.' Thereupon the

plaintiff took, and the Court sealed, 'this bill of exceptions to the ruling, opinions and action of said Court,' and thereafter granted the appeal the parties had stipulated.''

(b) The next contention made in Petitioner's Brief is that the Circuit Court of Appeals does not have the power to review conclusions of law ''*embodied in general findings*'' made by the trial court.

The difficulty with this contention is that it is based upon a false premise and the argument has no application at all.

It assumed that the District Court made no special findings, which is incorrect. The only basis for the argument that the court made no such findings is the fact that its findings were stated at the end of its opinion rather than on a separate sheet of paper. They are clearly special, not general (R. 205) and are followed by a general finding for defendant. The fact that these findings were not stated in a separate paper is of no importance as the courts have repeatedly held.

People's Bank of Keyser, W. Va. v. International Finance Corporation, 30 F. (2d) 46;

Mayes v. Paul Jones & Co., 270 Fed. 121;

P. H. & F. M. Roots Co. v. United States, 17 F. (2d) 337.

As the Court of Appeals said in its opinion, there were no disputed facts in this case. The District Court near the close of its opinion said (R. 204):

''The statements of fact contained in this opinion may be taken as findings of fact. If separate findings of fact are desired the parties may submit requests in accordance herewith.''

The statements of fact, which were contained in the opinion of the court were all correct, as both parties admitted, and there was therefore no necessity for any special findings or exceptions. The court then proceeded to state his conclusions from the admitted facts in serially numbered paragraphs (R. 205), and it was these conclusions which were challenged by respondent in the Court of Appeals.

It follows that the second point made by petitioner has no validity because based on the erroneous assumption that there were no special findings made by the court below.

(c) The third contention of petitioner is that the Circuit Court of Appeals could not upon the record as here existing review the findings of the trial court to determine whether there was any evidence upon which they could be based.

This contention also has no fact basis to support it. As there was no dispute as to the facts, there was no occasion for a review of the evidence. Respondents' complaint to the Court of Appeals was that the District Court had drawn erroneous conclusions and had reached a decision not in accordance with law upon the admitted facts. Proper exceptions were taken to these rulings and they were properly assigned as error (R. 205, 209).

It seems almost ludicrous to argue that the Court of Appeals had no power to correct an error of law appearing on the face of the record. Such errors can be corrected even if not excepted to or assigned as error.

Denver v. Home Savings Bank, 236 U. S. 101, in which this Court said (pp. 103-104):

> "... The Circuit Court of Appeals declined to consider the correctness of this ruling because no ex-

ception was taken to it. But no exception or bill of exceptions is necessary to open a question of law already apparent on the record and there is nothing in the record that indicates a waiver of the defendant's rights. Therefore we must consider the merits of the defence. *Nalle v. Oyster,* 230 U. S. 165."

Mahler v. Eby, 264 U. S. 32;

Baltimore & Ohio Railroad Co. v. McCune, 174 Fed. 991.

The argument of petitioner (Petitioner's Brief, p. 19) that whether

> "there was substantial evidence to sustain the findings of a trial judge in cases tried without a jury is a question of law arising in the progress of the trial and is reviewable only when a ruling on that specific question is obtained during the progress of the trial"

is particularly inept in view of the fact that in this case the parties agreed to argue the questions at issue before the court on a record which had already been made and when it could not be known what the rulings of the court would be on the points mentioned until after the argument and of course long after the trial, which had already taken place. It would be obviously impossible to "take exceptions during the trial of the case" to rulings which were not made until after the case was ended. Further, as has been said, there was no question of evidence involved—only whether the District Court had reached proper conclusions under the law and admitted facts.

We confess our inability to follow the reasoning of petitioner on this point.

(d) The final contention advanced by petitioner is that the court below erred in holding that there was nothing in

the record which would sustain the conclusion of the District Court that the improvement in the art devised by respondent did not involve invention.

In complaining of this ruling the petitioner argues (Petitioner's Brief, p. 20):

> "The ultimate response to the question whether a patentee has performed an inventive act must always be based upon a comparison of the alleged invention with what was in the prior art and ascertainment of the differences between them.
>
> "When facts which enable a court to make that comparison and ascertainment are fully established by evidence about which there is no dispute, a court has before it the proper basis for forming a judgment upon the issue of invention, and its decision, even though erroneous, cannot properly be characterized as unsupported by any evidence."

The sole basis of this criticism is a sentence in the opinion of the Court of Appeals, in which (referring to the opinion of the District Judge, holding respondent's invention disclosed no improvement in the art) it was said (R. 226):

> "Not only has this expression of opinion no testimony in the record to support it, but"

evidence produced by the defendant itself shows the contrary.

The Court of Appeals was strictly accurate in its statement that there was no testimony in the record to support this expression of opinion by the District Court. The Court of Appeals did not hold, as petitioner argues, that there was nothing in the record which would warrant a conclusion being reached by the District Court on the question of invention.

The Court of Appeals pointed out that had the case been tried before a jury, it would have been the duty of the trial Court to instruct the jury to find the patent valid and infringed, and continued

> "that jury trial was waived in no way changed this question of law into one of fact or prevents this Court from reviewing the action of the trial Judge in holding this patent invalid" (R. 233).

The Court of Appeals did not hold, as argued, that the evidence on the record failed "to furnish a proper basis for determining the issue of invention". What it did hold was that the District Court, upon the undisputed facts, had reached a wrong conclusion and it was this conclusion which was corrected by the Court of Appeals.

Conclusion.

It is respectfully submitted that the petition for a writ of certiorari should be refused.

Respectfully submitted,

LEON EDELSON,
T. R. WHITE,
Counsel for Respondent.

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IN THE

Supreme Court of the United States.

No. 709. October Term, 1933.

EASTMAN KODAK COMPANY, EASTMAN KODAK COMPANY OF NEW YORK AND EASTMAN KODAK STORES, INC.,

Petitioners,

v.

CHARLES B. GRAY,

Respondent.

BRIEF FOR RESPONDENT.

STATEMENT OF THE CASE.

This is an action at law for infringement of a patent for a "power transmitting mechanism" or "cable release" for actuating the shutter of a camera.

The patent in suit, number 1,314,867 (R., Vol. II, p. 206) was granted September 2, 1919, to respondent Charles B. Gray, upon an application filed February 7, 1918.

Petitioners are engaged in the manufacture and sale of cameras and camera equipment and accessories of all kinds.

The statement of claim alleged that petitioners were manufacturing and selling the cable release which was covered by respondent's patent. The defenses were that

the claims of the patent were invalid and certain of them were not infringed.

The case was first tried before Judge Dickinson and a jury. Certain of the facts were agreed to by stipulation (R., pp. 20-22, 118). Witnesses were examined by both parties and a large number of exhibits were introduced in evidence. There was no conflict in the testimony.

The court submitted the case to the jury (R., p. 118) which found a verdict in favor of respondent (R., p. 148). Petitioners moved for a new trial, which Judge Dickinson granted on the sole ground that upon examining the charge he found it to be "wholly inadequate and the jury lacked the instructions which should have been given" (R., p. 149).

The facts being entirely undisputed, the parties agreed to waive a trial by jury and to submit the case to another Judge of the District Court "for decision upon the record already made" (R., p. 149), and further stipulated "that all motions made by either party at the said trial (before Judge Dickinson) shall be deemed to have been made before the Judge trying the case, both parties to have the right of appeal as in other cases" (R., pp. 149-150).

Pursuant to the stipulation, the parties appeared before Judge Kirkpatrick in the District Court, and argued the case on the record already made, no witnesses being examined or evidence produced; each party requested the entry of judgment in his favor.

In due course, the said Judge filed his opinion, in which he recited the facts, expressed his views on certain legal points, and made an order that judgment should be entered for petitioners.

Thereupon, the respondent duly took exceptions "to the rulings, opinion and action of the said Court", and the seal of the Judge was affixed thereto (R., p. 156).

Thereafter, and within the proper time, respondent filed his petition for appeal to the Circuit Court of Appeals for the Third Circuit. An order allowing the appeal was made and the assignments of error were filed on August 15, 1932.

On December 9, 1932, petitioners submitted to the Court of Appeals a motion to dismiss the case, on the ground that the record presented no question properly reviewable by that Court (R., p. 164). The statement in the brief of petitioners in this Court (p. 6) that "decision on the motion was postponed until final hearing" is inadvertent, as the motion was not presented to the court until December 9, 1932, the day the case was actually argued (R., pp. 164-165).

On August 22, 1933, the Court of Appeals filed its opinion and decision, holding that the admitted and undisputed facts shown by the record submitted to Judge Kirkpatrick did not support his judgment, reversed the case and granted respondent a new trial (R., pp. 165-180).

Petitioners filed a petition for rehearing, which was in due course denied, and thereafter, without waiting for further proceedings in the court below, petitioned this Court for a certiorari, which was granted.

SUMMARY OF ARGUMENT.

1. The Court of Appeals Had Power to Review the Record of the District Court, to Determine Whether the Facts Shown by the Stipulated Record Supported the Judgment.

(a) The Court of Appeals did not reverse the judgment of the District Court on the ground that the evidence did not support its findings, but on the ground that the undisputed facts did not support the judgment.

(b) Where the facts which are the basis of the court's judgment are agreed to or established by undisputed evidence, the question whether the judgment is supported by those facts is always open to review by a court of appeals, whether or not a motion for judgment was made at the trial.

(c) The facts shown by the stipulated record upon which the District Court based its judgment were all either agreed to by the parties or established by undisputed evidence.

(d) Petitioners requested the District Court to rule on the question of invention as a matter of law and cannot now argue that such ruling was a finding of fact not open to review.

(e) Respondent made a motion for judgment in his favor upon the stipulated record which under any theory of the case enabled that record to be brought before the Court of Appeals for review.

2. **The Writ of Certiorari Should Be Dismissed Without Examination Into the Merits of the Case Because the Reasons for Granting the Writ Alleged in the Petition Have Been Shown to Have No Existence.**

3. **The Facts Shown by the Stipulated Record, All of Which Were Agreed Upon or Established by Undisputed Evidence, Do Not Support the Judgment Which Was Entered by the District Court, and the Court of Appeals Properly Reversed That Judgment and Granted a New Trial.**

   (a) The combination of an open coil spring casing, with a closed coil plunger—admittedly novel—involved invention and the patent was properly held valid by the Court of Appeals.

   (b) Claims 1 and 2 of the patent are properly interpreted as calling for a closed coil plunger.

   (c) Nothing occurred in the Patent Office which prevents respondent from so reading these claims; there was no estoppel and no abandonment of this essential feature of the invention.

4. **The Contention Made in Petitioners' Brief, That They Had Conceived of Respondent's Device Before He Disclosed It to Them Is Immaterial to This Appeal, But the Admitted Facts Do Not Sustain This Conclusion.**

ARGUMENT.

1. THE COURT OF APPEALS HAD POWER TO REVIEW THE RECORD OF THE DISTRICT COURT, TO DETERMINE WHETHER THE FACTS SHOWN BY THE STIPULATED RECORD SUPPORTED THE JUDGMENT.

(a) The Court of Appeals did not reverse the judgment of the District Court on the ground that the evidence did not support its findings, but on the ground that the undisputed facts did not support the judgment.

Petitioners, in their brief, have sought to convey the impression that the Court of Appeals reviewed conflicting evidence in the court below, and, on the theory that the facts found were not sustained by the evidence, reversed the case. Thus, in their brief, page 6, petitioners assert that the Circuit Court of Appeals held

> "that the evidence did not support the findings made by the trial judge but required contrary findings leading to the conclusion that the patent was valid and infringed".

And in their specification of errors it is alleged that the Circuit Court of Appeals erred

> "2. In holding that the evidence did not support the findings challenged on appeal by respondent's assignment of errors but required contrary findings leading to the conclusion that the patent in suit was valid and infringed."
>
> (Petitioners' Brief, p. 7.)

Other statements of like character, apparently intended to convey the impression that this is what the Court did, are to be found on pages 7, 8, 10, 13, 23, and at other points in the petitioners' brief.

These statements are incorrect and convey an erroeous impression. The following excerpts from the opinion of the Circuit Court of Appeals make this clear:

> " . . . In substance, the trial was a quasi demurrer. No witnesses were examined. On final hearing neither party asked for any special findings of fact, for there were no disputed facts." (R., p. 165.)

> "We here again note—for it cannot be too strongly stated—that in this case there were no disputed facts." (R., p. 172.)

> " . . . In the proceedings in the patent office, there were, as is here the case, no disputed facts." (R., p. 174.)

> " . . . There being no question as to the facts, the Court below was confronted with the legal question of whether the making of the combination, which was novel and useful also, involved invention." (R., p. 174.)

> "It will be observed that there is, and was, no dispute as to facts. No terms of art were involved. The specification was self-explanatory. The elements were all old. No issues of fact were raised." (R., p. 177.)

> ". . . Had the present case been tried with a jury, it is clear that with no issue of fact involved, with the presumption of validity created by the grant of the patent, with the affirmative testimony of defendant's witness Christie showing gained flexibility, with no contradictory testimony whatever, it would have been the duty of the court to instruct the jury the patent was valid and infringed. That jury trial was waived in no way

changed this question of law into one of fact or prevents this Court from reviewing the action of the trial Judge in holding this patent invalid." (R., p. 179.)

The record fully sustains the Court of Appeals in these statements; our object in quoting them is to demonstrate the inaccuracy of the many statements contained in the petitioners' brief, asserting that the Court of Appeals reviewed the evidence and found that it did not support findings of fact made by the court below.

What the Court of Appeals did was quite different. It reviewed the record and found that the judgment of the district court was not supported by the undisputed facts shown by the stipulated record.

(b) Where the facts which are the basis of the court's judgment are agreed to or established by undisputed evidence, the question whether the judgment is supported by those facts is always open to review by a court of appeals, whether or not a motion for judgment was made at the trial.

It is well settled that where the facts, which are the basis of the judgment of a court trying a case without a jury, are agreed to or established by undisputed evidence the record may be reviewed by the Court of Appeals to determine whether the judgment is supported by the admitted facts.

Supervisors v. Kennicott, 103 U. S. 554. This case was tried by a judge without a jury in the District Court on an agreed statement of underlying facts. The trial judge made a general finding for the plaintiff and entered judgment in his favor. The plaintiff upon appeal contended that there was nothing which could be re-examined by this Court, for

the same reasons urged in the case at bar, there being a general finding for the plaintiff. This Court rejected the argument, holding that, in view of the fact that the judgment was based on agreed facts, "There was no issue but of law, and that the court found for the plaintiffs. The same case is brought here by the record, and we are entirely satisfied it is one we have the power to review" (p. 557), thereupon reversing the judgment.

It is also well settled that even though all the facts are not agreed to, if they are proven by evidence which is admitted to be uncontradicted, the case is treated as one of an agreed statement of facts, and the question whether these facts support the judgment is open for review. This is well illustrated by the case of *Insurance Co. v. Tweed*, 7 Wall. 44, in which this Court had under consideration its right to review the judgment of a trial court sitting without a jury. The case had not been submitted upon an agreed statement of facts, but counsel for both parties had agreed that certain parts of the opinion of the trial judge contained the material facts of the case. This Court assumed jurisdiction to review the judgment, saying (p. 51):

> "We are asked in the present case to accept the opinion of the court below, as a sufficient finding of the facts within the statute, and within the general rule on this subject. But with no aid outside the record we cannot do this. The opinion only recites some parts of the testimony by way of comment in support of the judgment, and is liable to the objection often referred to in this court, that it states the evidence and not the facts as found from that evidence. Besides, it does not profess to be a statement of facts, but is very correctly called in the transcript, 'reasons for judgment.'
>
> "But the counsel for both parties in this court have agreed to certain parts of that opinion as containing

the material facts of the case, and to treat them here as facts found by the court; and inasmuch as they could have made such an agreement in the court below, we have concluded to act upon it here as if it had been so made."

The rule of *Insurance Co. v. Tweed* was approved by this Court in *Lehnen v. Dickson*, 148 U. S. 71.

Other cases in this Court recognizing the rule of *Supervisors v. Kennicott* are *United States Trust Co. v. New Mexico*, 183 U. S. 535, *Wilson v. Merchants Loan & Trust Co.*, 183 U. S. 121.

Cases in Circuit Courts of Appeals sustaining the same principles and holding that an agreement as to facts either formal or informal presents a case reviewable by an appellate court to ascertain whether the facts sustain the judgment are the following:

United States v. Smith, 39 F. (2d) 851 (First Circuit); *Southern Railway Company v. Atlantic National Bank*, 112 Fed. 861, certiorari denied 184 U. S. 700 (Fifth Circuit); *Philadelphia Casualty Co. v. Fechheimer*, 220 Fed. 401 (Sixth Circuit); *Mayes v. Paul Jones Co.*, 270 Fed. 121 (Sixth Circuit); *Union Wire Rope Corp. v. Atchison etc. Ry. Co.*, 66 F. (2d) 965, certiorari denied 54 S. Ct. 122, 78 L. Ed. 114 (Eighth Circuit); *Order of United Comm. Travelers v. Shane*, 64 F. (2d) 55 (Eighth Circuit); *Perry v. Wiggins*, 57 F. (2d) 622, certiorari denied 287 U. S. 609 (Eighth Circuit); *Kirkman v. Farmers Savings Bank*, 28 F. (2d) 857 (Eighth Circuit); *Lumbermen's Trust Co. v. Ryegate*, 61 F. (2d) 14 (Ninth Circuit); *Greer-Robbins Co. v. United States*, 19 F. (2d) 841 (Ninth Circuit); *U. S. Fidelity & Guaranty Co. v. Wyer*, 60 F. (2d) 856, certiorari

denied 287 U. S. 647 (Tenth Circuit); *White v. United States,* 48 F. (2d) 178 (Tenth Circuit).

The principle announced by these cases is succinctly expressed in *Kirkman v. Farmers Savings Bank,* supra, 28 F. (2d) at pages 860-861, as follows:

> "When a case is tried upon an agreed stipulation of facts, the question whether the facts are sufficient to support the judgment is open to review on writ of error, though neither a finding nor declaration of law are requested. Hipple v. Bates County, 223 F. 22 (C. C. A. 8); certiorari denied 241 U. S. 672, 36 S. Ct. 723, 60 L. Ed. 1231; Lehnen v. Dickson, 148 U. S. 71, 73, 13 S. Ct. 481, 37 L. Ed. 373; Wayne County v. Kennicott, 103 U. S. 554, 26 L. Ed. 486; Blair v. United States (C. C. A.), 241 F. 217, 230; Mutual Life Ins. Co. v. Kelly, 114 F. 268 (C. C. A. 8)."

(c) The facts shown by the stipulated record upon which the District Court based its judgment were all either agreed to by the parties or established by undisputed evidence.

The decision and judgment of the district judge was based upon a record which was submitted to him by stipulation for his decision (R., p. 149), "both parties to have the right of appeal as in other cases" (R., p. 150). The argument before that court is referred to as a trial, but in fact it was not a trial; no witnesses were examined and no evidence taken. The record so submitted to the district judge was made up of stipulations (R., pp. 20-22, 118) and many exhibits, patents, samples of releases, etc., which had been offered at the first trial. It also consisted of the testimony of witnesses called by both sides, but there was no contradiction in the testimony.

It is expressly admitted by petitioners that the facts shown by that record are undisputed, at least so far as relates to any issue which came before the Court of Appeals, and that it supplied the district judge with all facts necessary to decide the validity of the patent. Thus, in their brief (p. 22) petitioners say there was no conflict in the testimony

> "relating to the prior art, the inventions described in earlier patents, and the nature of the accused devices."

And in the petition for certiorari (p. 20) petitioners assert:

> "In the instant case the evidence fully established the nature of the alleged improvement, the nature of the devices found in the prior art, and the differences in structure and operation between the alleged improvement and the prior art devices."

In their brief in this Court, the principles above advanced by respondent are assented to by petitioners as applied to this case (pp. 21-22), but the argument is made that the said record did not include *all* the facts necessary for the decision of the Court; that

> "The ultimate facts going to make up the plaintiff's alleged cause of action and defendants' grounds of defense—invention, novelty, and infringement—remained for determination by the trial judge, who decided them in favor of the defendants": (Petitioners' Brief, p. 22).

This requires an examination to determine whether these three defenses—invention, novelty and infringement—did remain, as alleged, for determination by the trial judge **as facts**, and were decided in favor of petitioners.

We will first consider the question of infringement. Claims 1 and 2 of the patent are the only ones remaining

in the case; they were the only ones dealt with by the Court of Appeals. In the record appears the following statement by counsel for petitioners (R., pp. 62-63):

> "MR. DAVIS: It has already been stated in answer to your Honor's question and in the presence of the jury, that the defendant does not deny that claims 1 and 2 of the patent are infringed if they are valid."

This disposes of the argument that the question of infringement "remained for determination by the trial judge".

The next question is as to "novelty" as a defense. It is respondent's contention that claims 1 and 2 of the patent, if construed to call for a closely coiled tube as a plunger, cover a novel invention and are valid. In the district court and in the Court of Appeals petitioners contended that these claims, if so construed, were anticipated by a British patent. This claim was found against them both by the district court (R., pp. 152-153) and by the Court of Appeals (R., pp. 168-169).

It is thus clear that the finding of the District Court on the question of novelty was not, as alleged, in favor of defendants (petitioners) but on the contrary was in favor of the respondent.

This leaves only the one question of "invention", which is now claimed remained for decision by the trial judge as an "ultimate fact", upon which, it is alleged, there was a finding of fact favorable to petitioners such as to preclude a further examination by any court.

It should be noted that the question of invention was the principal issue in this case. A conclusion thereon obviously could not have been stipulated but must be left to be drawn by the court by the application of legal principles

to admitted facts. That a conclusion of this kind is not to be considered an "ultimate fact," which must be agreed upon within the ruling of *Wilson v. Merchants Loan & Trust Co.*, 183 U. S. 121, 127, cited by petitioners, is self-evident.

In *United States v. Jefferson Electric Mfg. Co.*, 78 L. Ed. Advance Opinions, p. 541, decided by this Court on February 12, 1934, it appeared that the court had tried, without a jury, a claim for a tax refund. The taxpayer had sold certain articles subject to tax for a flat price but with a notification to the purchaser that a certain fraction of the price was to cover the tax. The total price charged to the purchaser had been reduced from the price previously charged by the amount of the tax and for that reason the district court held that, while the taxpayer had collected the tax from its customers, it had returned it to them, and, therefore, was entitled to sue and recover a refund.

The Circuit Court of Appeals had reversed the judgment of the district court, on the ground that the evidence did not support the facts which it found. This Court reversed the action of the Court of Appeals, holding it

> "was not within the province of that court to re-examine the evidence and reverse the judgments because of what it regarded as errors of fact." (P. 553.)

This Court continued, however:

> "Whether the special findings give the requisite support to the judgments rendered thereon is a different question and is one which is open to consideration here." (P. 553.)

In its consideration as to whether the findings did support the judgments, it was strongly argued that the conclusion of the district court that the tax had been refunded to the purchaser by the taxpayer was a finding of fact,

which supported the judgment and by which the Court of Appeals was bound. This Court, however, rejected this view and held that such finding was

> "shown by its mere statement to be not a finding of fact but unsatisfactory reasoning having little tendency to establish its objective" (p. 554),

and that it must, therefore, be disregarded.

So, in the case at bar, we submit that the statements of the court that he "was satisfied" that the combination of elements made by respondent produced no new joint function and was unpatentable (R., p. 151), that he was "unable to see" how the arrangement of the elements made by respondent created any new functional relationship (R., p. 152), and that the combination was "not patentable" for certain reasons (R., p. 155), cannot be considered as findings of fact precluding any re-examination thereof by the Court of Appeals. They were, rather, a statement of his reasons, based on underlying and admitted facts, for the final action which he took, which, if unsatisfactory, may be disregarded.

A case in the Circuit Court of Appeals for the Eighth Circuit, which well illustrates the same point, is

Union Wire Rope Corp. v. Atchison, T. & S. F. Ry. Co., 66 F. (2d) 965, certiorari denied 54 S. Ct. 122, 78 L. Ed. 114. That case had been tried by the court without a jury and the underlying facts were stipulated or undisputed. The question involved was what tariff applied in determining a freight rate; this in turn depended upon whether the articles shipped had been manufactured or merely reworked at the point of shipment.

It appeared that steel rods had been shipped to this point and there had been made into wire rope, which in-

volved subjecting the rods to a heating process and certain chemical treatment, making them into wire, and weaving said wire into strands about a central core of manila rope.

The underlying facts as to what was done and as to the customary meaning of "re-working," etc., were established by evidence which was undisputed.

The district court, sitting without a jury, had found as a "special finding of fact" that the process above described produced a new manufactured product, consequently, it took a certain rate on reshipment. It was contended that this was a finding of fact which could not be re-examined in the court above. The Court rejected this argument and said in this connection (p. 968):

> ". . . it is sufficient to say that whether it can be said (as matter of law) that the wire and wire rope are 'new manufactured' products from the rods is not really determinative (as treated hereinafter) of the meaning of the tariff. The essence of this appeal is to test whether the real facts found support the judgment."

So, in the case at bar, the real question under discussion by the Court was whether or not respondent's invention was patentable and in reaching this conclusion he expressed the opinion on undisputed facts that no new mode of operation or functional relationship arose from putting together two well known elements. This, if not purely a question of law, which we think it is, was at least only an expression of opinion on underlying facts leading to the final conclusion of law and does not prevent the Court from examining the record to determine (as expressed in the case cited) whether the real facts support the judgment.

Petitioners argue as an abstract proposition that whether an improvement involves invention is a question of fact and, therefore, the court's conclusion on that point, although not framed as a finding of fact (see R., pp. 152-155), must be so considered and from this it is further argued that it cannot be re-examined by any reviewing court.

Even if this were correct, it would not be conclusive of this case. In the two cases above cited, the final conclusion was quite as much one of fact as the conclusion under discussion, and yet this Court held in the most recent case in which this matter has been examined that a conclusion deduced from admitted facts should be looked upon as "reasoning" which, if not satisfactory, may be disregarded.

Many questions which are ordinarily fact questions become legal questions when the underlying facts are undisputed. See, for example, *E. G. Budd Mfg. Co. v. Wilson Body Co.*, 21 F. (2d) 803 (C. C. A. 6), in which the Court said that a conclusion as to whether an improvement involved invention was a question of law where the underlying facts were undisputed. A certiorari was denied in this case: 276 U. S. 632.

Other cases clearly sustaining the same principle are

Heald v. Rice, 104 U. S. 737, 749; *United States v. Pugh,* 99 U. S. 265, 270-271; *Market Street Railway Co. v. Rowley,* 155 U. S. 621, 625; *Singer Company v. Cramer,* 192 U. S. 265, 275; *Winton v. Amos,* 255 U. S. 373, 395; *Sanitary Refrigerator Co. v. Winters,* 280 U. S. 30, 36; *Order of United Comm. Travelers v. Shane,* 64 F. (2d) 55, 57 (C. C. A. 8).

(d) Petitioners requested the District Court to rule on the question of invention as a matter of law and cannot now argue that such ruling was a finding of fact not open to review.

There is another consideration which is fatal to petitioners' argument. They themselves in the district court took the position that whether invention was involved in the improvement devised by respondent was a question of law, and requested the court so to rule. They cannot now, therefore, be heard to argue otherwise.

Petitioners submitted a number of points for charge to the court at the jury trial; among them was the following (R., p. 144):

> "25. The combination, in a cable release, of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having a limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member from said stem to said slide member was described in Edwards' British Patent No. 5,741, of 1906, in such full, clear and exact terms, as to enable any person skilled in the art of making cable releases to make and use an invention so described without the exercise of more than mechanical skill."

Point No. 27 (R., p. 144) was substantially the same.

It is clear, therefore, that petitioners asked the court at the trial to charge the jury as a matter of law that to make and use the invention described in this point did not

require "more than mechanical skill." In other words, they asked the court to charge the jury as a matter of law that the said improvement in the art did not involve invention.

In view of the provision in the stipulation that all motions made at the first trial should "be deemed to have been made before the Judge trying the case" at the second trial, these points must be looked upon as having been presented to the District Judge who tried the case the second time for his ruling thereon.

Although that judge did not specifically answer the many points presented by petitioners, he may have been influenced, and no doubt was, by their requests and found as requested that the improvement devised by respondent did not involve invention. The District Court having so found, the cases are clear that petitioners cannot now contend that the finding was not the conclusion of law which they requested but a finding of fact which is not reviewable.

The general principle that a party cannot on appeal take a position inconsistent with that taken by him in the court below is well settled.

San Juan Light Co. v. Requena, 224 U. S. 89; *Thomas v. Taylor*, 224 U. S. 73; *Texas & Pac. Railway Co. v. Abilene Cotton Oil Co.*, 204 U. S. 426; *Osgoodby v. Talmadge*, 45 F. (2d) 696 (C. C. A. 2); *Meloon v. Davis*, 292 Fed. 82 (C. C. A. 1); *Ford Motor Co. v. Farrington*, 245 Fed. 850 (C. C. A. 9); *United States v. Kettenbach*, 208 Fed. 209 (C. C. A. 9).

In the Appellate Court a party will be restricted to his theory of the case, as evidenced in the lower court, by his requests for findings: *Moretti v. Fire Assn. of Phila.*, 265 Pa. 9, 108 Atl. 171; his reasons assigned for asking for a

non-suit; *Barnes v. Perine,* 12 N. Y. 18; his motion for a directed verdict in his favor; *West v. Newton,* 229 Mich. 68, 201 N. W. 196; *Dutcher v. Porter,* 63 Barb. 15 (N. Y.); or his express statement of the theory on which the case was tried, *American Railway Express Co. v. Mohawk Dairy Co.,* 250 Mass. 1, 144 N. E. 721.

This rule has been expressly extended to cases where in the court below a party treated a matter at issue as a question of law and attempted on appeal to reverse himself and assert the contrary. This, it was held in the cases following, could not be done.

American Railway Express Co. v. Mohawk Dairy Co., 250 Mass. 1, 144 N. E. 721; *West v. Newton,* 229 Mich. 68, 201 N. W. 196; *Barnes v. Perine,* 12 N. Y. 18; *Dutcher v. Porter* 63 Barb. 15 (N. Y.).

In *West v. Newton,* supra, both parties had moved for a directed verdict. After a verdict was directed for the plaintiff the defendants appealed, alleging that the case should have been submitted to the jury. The Court said, at page 71:

> "The defendants claim that the court erred in directing a verdict for the plaintiff, because there was an issue of fact for the jury. . . . Both parties having asked for a directed verdict, counsel cannot now complain that there was an issue of fact for the jury: *Kyselka v. Assurance Co.,* 194 Mich. 430; *Germain v. Loud,* 189 Mich. 38; *City National Bank v. Price's Estate,* 225 Mich. 200."

In *Barnes v. Perine,* supra, the defendant had moved for a non-suit, assigning three separate propositions of law in support of his motion. The motion was denied and a verdict was directed for the plaintiff. The defendant then

appealed on the ground that the case should have been submitted to the jury. The judgment was affirmed, the court saying, at page 23:

> "If the defendant supposed that there was a disputed question of fact, material to the issue between the parties, he should have made a distinct request that it should be submitted to the jury. But having treated the questions as purely legal, and acquiesced in the disposal of them by the court as such, he cannot now be heard to object that facts were involved which should have been decided by the jury."

It is therefore clear from the foregoing considerations that the record submitted by stipulation to the District Court contained all of the underlying and ultimate facts necessary to the decision, all of which were undisputed, and that the Court of Appeals had power and jurisdiction to review the entire record to ascertain whether the judgment was supported by the facts stipulated and agreed to.

(e) Respondent made a motion for judgment in his favor upon the stipulated record which under any theory of the case enabled that record to be brought before the Court of Appeals for review.

The stipulation waiving a trial by jury in this case (R., p. 149), after providing for the submission of the case to the Court on the record already made, further provided

> "all motions made by either party at the said trial [before Judge Dickinson and a jury] shall be deemed to have been made before the Judge trying the case, both parties to have the right of appeal as in other cases."

At the said previous trial the motions made by petitioners were as follows:

(1) A renewal of a previous motion to quash the writ (R., p. 76).

(2) A motion for non-suit (R., p. 76).

(3) A motion or request for instructions to the jury on various points including a motion for a directed verdict in favor of petitioners (R., pp. 135-147).

(4) A motion for a new trial and to set aside the verdict (R., p. 148).

Respondent made but one motion at the said trial, to wit: a motion for judgment on the verdict and assessment of damages. This is shown in the Record only as a docket entry. (R., p. 3, Entry of Jan. 9, 1932.)

The provision in the stipulation that the motions made by either party at the previous trial should be considered as having been made "before the Judge trying the case" obviously means that the said motions with such changes as would be appropriate by reason of the changed character of the trial should be considered as having been made at said trial. Thus petitioners' motions for quashing the writ and for nonsuit would be substantially as made. Their motion that the court instruct the jury on certain points would be treated as requests for special findings in view of the fact as remarked by Judge Taft in *Humphreys v. Third National Bank,* 75 Fed. 852, 856 (C. C. A. 6), that a court could not be expected to instruct himself on these points; their motion for binding instructions would obviously be considered as a motion for judgment in favor of petitioners upon the whole record. As petitioners' motion for a new trial was granted, it need not be considered.

As noted above, respondent made but one motion,—a motion for judgment on the verdict and assessment of dam-

ages. Applying this to the trial before Judge Kirkpatrick, it could only be construed as a motion for judgment in favor of respondent on the record submitted to that Judge and that damages be assessed.

In the Court of Appeals petitioners argued that this motion could not be so construed because it was a motion for judgment on the verdict, and it was argued that a motion for judgment on the verdict made before a judge trying a case without a jury would be meaningless.

It is submitted that this argument is unsustainable. If the term of the stipulation above quoted did not mean that the motion in question made by the respondent should be considered as having been made at the trial before Judge Kirkpatrick, it meant nothing as regards respondent, for he made no other motion.

It is therefore clear that a motion for judgment was made by plaintiff at the trial before Judge Kirkpatrick and the refusal of that motion brought the whole record before the Court of Appeals for review, as it raised the question of law whether the court under all the facts was not bound to enter judgment for the plaintiff.

Moreover, each counsel at the argument on the stipulated record, requested Judge Kirkpatrick to enter judgment in favor of his client. There was no other purpose in arguing the case before Judge Kirkpatrick. Even if there were no formal motions on the record, these requests under all the circumstances of the case should be considered as motions for judgment for plaintiff and defendant, respectively, and in reaching his conclusions the Court granted one and refused the other. Proper exceptions were taken by respondent to the action of the court and upon the admissions contained in petitioners' brief (see pp. 11, 14), this

brought the whole record before the Court of Appeals for review, irrespective of any other point.

The foregoing argument has been advanced without taking into consideration section 269 of the Judicial Code as amended by the Act of February 26, 1919, c. 48 (28 U. S. C. § 391). That act provides:

> On the hearing of any appeal, certiorari, writ of error, or motion for a new trial, in any case, civil or criminal, the court shall give judgment after an examination of the entire record before the court, without regard to technical errors, defects, or exceptions which do not affect the substantial rights of the parties.

We submit that if this act is to be applied to any case, it should be applied to the case at bar. We do not contend that the act should be construed to abolish the necessity of exceptions in cases where an exception or motion is necessary to call to the attention of the trial judge an alleged error, and afford him an opportunity of correcting it; but where, as here, the motion for judgment which petitioners allege was required to save questions involved for review, was a mere formality not necessary to direct the attention of the judge to the points at issue, it seems clear that the act should be applied. So it was held in *Muentzer v. Los Angeles Trust & Savings Bank*, 3 F. (2d) 222 (C. C. A. 7). In that case it was contended that the Court of Appeals could not review the evidence in order to determine whether it supported the finding of the trial judge because the appellant had made no motion for judgment. Said the court (p. 223):

> "But what is the purpose of a formal motion, or of an exception? It is to apprise the court of the litigant's position, that it may, in furtherance of justice,

> correct such ruling if convinced of its error. Where both parties have fully and fairly presented the evidence, as here, and argued the questions of law fully, it seems particularly appropriate that section 269 of the Judicial code should be invoked to save litigants from the consequences of an oversight by counsel."

An examination of the cases in which it was held that this section of the code does not dispense with the necessity of exceptions reveals that in the majority of those cases counsel by failing to take exceptions had either not made known their position or had not given the court an opportunity to correct the errors complained of. This section has never been construed by this Court.

It is submitted that the Court of Appeals had jurisdiction to review the record in this case.

2. THE WRIT OF CERTIORARI SHOULD BE DISMISSED WITHOUT EXAMINATION INTO THE MERITS OF THE CASE BECAUSE THE REASONS FOR GRANTING THE WRIT ALLEGED IN THE PETITION HAVE BEEN SHOWN TO HAVE NO EXISTENCE.

The petition for certiorari in this case alleged four reasons why this Court should allow the record to be brought before it. It has been shown that none of these has any foundation.

The first reason alleged (Petition p. 8) was that the Court of Appeals held, contrary to decisions of this Court, that whether an improvement requires mere mechanical skill or the exercise of the faculty of invention is a matter of law rather than a question of fact, although the evidence was not in conflict.

It has been shown that petitioners themselves in the district court requested a finding as a matter of law that

respondent's improvement did not involve invention, and, therefore, could not reverse themselves in the Court of Appeals and allege the finding they had requested, was a finding of fact, not subject to review.

Further, it has been shown that the conclusion of the district court that the improvement made by respondent did not involve invention was merely the result of reasoning from underlying and admitted facts, and under the decisions of this Court may be disregarded in determining whether the facts found supported the judgment.

The second reason alleged for granting the writ was that the Circuit Court of Appeals had decided, in conflict with decisions of this Court, that it had power to review conclusions of law embodied in general findings made by the trial court.

The Court of Appeals made no such decision. It found that the stipulated and undisputed facts in the court below did not support the judgment which that court had entered, and in so doing its decision was in full accord with the decisions of this Court. This point is not argued in petitioners' brief.

The third reason alleged for granting the writ was that the Circuit Court of Appeals had, in conflict with decisions of this Court, decided that it had power to review the findings of the trial court to determine whether there was any evidence upon which they could be based.

The record and the opinion of the Court of Appeals so clearly demonstrates that it decided nothing of the sort that it must be assumed that counsel inadvertently advanced this reason. It has no foundation in the record.

The fourth reason alleged for the granting of the writ is that the Circuit Court of Appeals decided that the evidence in this case did not afford a basis upon which the trial

court could find that respondent's improvement did not involve invention, and that in so deciding the Circuit Court of Appeals had decided an important question of patent law, which has not been, but which should be, settled by this Court.

This reason also must have been inadvertently advanced. The Court of Appeals did not say, nor even suggest, that there were not sufficient facts in the record from which a conclusion could be reached as to whether or not respondent's improvement involved invention. The decision of the Court of Appeals was that, upon the facts admitted and agreed to, the court below was wrong in finding that there was no invention, and reversed the case for that reason.

This Court held in *Furness, Withy & Co. v. Ins. Ass'n,* 242 U. S. 430, *Houston Oil Co. v. Goodrich,* 245 U. S. 440, and in *Southern Power Co. v. Public Service Co.,* 263 U. S. 508, that where on further examination of a case it appears that no adequate reason exists for having granted a writ of certiorari it will be dismissed without examination into the merits.

A further reason for dismissing the case at this point is the total failure of petitioners to comply with the rule of this Court requiring each specification of error to be separately and particularly asserted. See *Seaboard Air Line Ry. v. Watson,* 287 U. S. 86, 91. The third assignment (the only one relating to the merits of the case), complains only that the court below erred "in reversing the judgment entered by the District Court and granting a new trial". (Petitioners' brief, pp. 6-7.) This is meaningless and fails entirely to comply with the rule.

The new and improved addition to the art which respondent contributed was **the combination of an open coiled spring tube with a closed coil spring plunger**; this provided a mechanism far superior to anything theretofore devised.

A reference to the patent shows a drawing which illustrates the mechanism in its entirety, consisting of the two springs aforesaid and certain other elements necessary to make up the completed mechanism (R., Vol. II, p. 207). In the specifications is contained the following description (R., Vol. II, p. 210):

> "This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, C, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely wound, adapts itself to the bending without kinking.
>
> "Practice has shown that a mechanism of this construction may be bent an indefinite number of times without kinking or otherwise disabling the coiled wire tubes."

As correctly stated in the petition for certiorari (p. 20):

> ". . . the evidence fully established the nature of the alleged improvement, the nature of the devices found

in the prior art, and the differences in structure and operation between the alleged improvement and the prior art devices."

The question before the Court of Appeals was whether the facts thus established and undisputed supported the conclusion reached by the trial judge that the improvement devised by respondent did not involve invention.

The district court in its opinion expressed the view that the invention was not patentable, saying in substance that an open coil spring tube having been known and used with a wire plunger, and a closely coiled spring plunger having been known and used with a closely coiled spring tube, no invention was involved in putting two of these elements together in a new combination, even though by so doing a different and superior result was achieved.

The Court of Appeals rejected this reasoning and found that the admitted facts did not sustain the conclusion that there was no invention in devising the release patented by respondent. In this connection, the Court of Appeals said (R., pp. 175-177);

> "The use of a plunger or inner member of a close-wound, non-compressible spiral spring was old. Wermann used it in Germany and the defendant had used it in America, but neither of them had sleeved it in an open-wound coil. So also the use on an outer or envelope member of close-wound coil was old. It had been so used in Britain by Edwards, but he used it as an envelope around a wire plaited plunger. Now the concept of Gray was to take the two well known devices of the prior art and for the first time use them conjointly, the close-wound coil as a pusher or plunger and the open-wound coil as an envelope. What was the effect of this novel combination? Christie answers that question. By this novel union Gray got a

photographic mechanism which was so superior to prior devices that it superseded and displaced all other and has been used by over a million users who bought from the defendant. Why this almost unprecedented result? A study of the prior structures and the exhibits in the record shows that Gray has produced a device which, while it retains the pusher rigidity of a wire, has done away with kinking and has furnished a mechanism which is as soft to the touch and as flexible as the rubber device of the old one which was abandoned, and at the same time has given a non-kinking plunger that is as rigid as a stiff wire. In other words, Gray gave to the Kodak the pliable, non-kinking features of the rubber tube, while at the same time he has retained the rigidity of a metal pusher without destructive kinking. This has been done not by merely using the two different kinds of coils, but by using them in a new relation, namely, by using the close-wound coil in the only place where it can be functionally modified by the outer open-wound coil and by using the open-wound coil in the only place where it can be modified by the inner placed close-wound coil. If Gray's relative positions were changed, if his open-wound coil was placed on the inside, and his close-wound one on the outside, if both coils were close-wound, or both were open-wound coils, such changes would be fatal. It is the new, inner and outer positions and relations in which these two different kinds of coils are placed that enables the outer coil to affect the inner and the inner to affect the outer as they never had before. This fact —for such it is—of the two coils, due to their relative position, affecting each other, is so original and seemingly so non-apparent as to lead to the belief that there is a mere aggregation of non-interlocking parts. But treating it as an aggregation with no new resultant function shows how really inventive, when duly appreciated, the new combination was. It took original thought to conceive and effort to embody the concep-

tion in practice. The effect of the novel combination of the two well known types of coils would occur only to the inventive mind, for other types of mind would naturally suppose that, used conjointly, they would operate in the old way. But the outcome proved otherwise. Moreover, the union of the two—one enveloping the other—only came after attempts for years to improve cable release. Enveloping the pusher member with a spring was known. The rigidity of a close-wound coil was known. So also was the expansibility of a loose-wound coil. Yet, strange as it seems, no one, prior to Gray, thought of nesting the former inside the latter. And when Gray disclosed it, as he did when he sent one of his devices to the defendant, it was jacketed by a textile cover. The defendant evidently could not understand how the rubber-like flexibility was effected and Gray's testimony, while not of facts, has the impress of certainty when he testified: 'The cover was evidently slitted to see what was in the inside, to see the construction.' They cut it open to see by what means he did it, at once recognized its worth, discarded their then type and adopted his. Now that it has proved its worth, his device deserves judicial recognition and its infringement due money reparation. The proofs show defendants have profited largely from it."

This Court in *Loom Company v. Higgins*, 105 U. S. 580, 591, laid down the rule whereby it could be determined whether or not an improvement involved invention in the following words:

"It is further argued, however, that, supposing the devices to be sufficiently described, they do not show any invention; and that the combination set forth in the fifth claim is a mere aggregation of old devices, already well known; and therefore it is not patentable. This argument would be sound if the combination

photographic mechanism which was so superior to prior devices that it superseded and displaced all other and has been used by over a million users who bought from the defendant. Why this almost unprecedented result? A study of the prior structures and the exhibits in the record shows that Gray has produced a device which, while it retains the pusher rigidity of a wire, has done away with kinking and has furnished a mechanism which is as soft to the touch and as flexible as the rubber device of the old one which was abandoned, and at the same time has given a non-kinking plunger that is as rigid as a stiff wire. In other words, Gray gave to the Kodak the pliable, non-kinking features of the rubber tube, while at the same time he has retained the rigidity of a metal pusher without destructive kinking. This has been done not by merely using the two different kinds of coils, but by using them in a new relation, namely, by using the close-wound coil in the only place where it can be functionally modified by the outer open-wound coil and by using the open-wound coil in the only place where it can be modified by the inner placed close-wound coil. If Gray's relative positions were changed, if his open-wound coil was placed on the inside, and his close-wound one on the outside, if both coils were close-wound, or both were open-wound coils, such changes would be fatal. It is the new, inner and outer positions and relations in which these two different kinds of coils are placed that enables the outer coil to affect the inner and the inner to affect the outer as they never had before. This fact —for such it is—of the two coils, due to their relative position, affecting each other, is so original and seemingly so non-apparent as to lead to the belief that there is a mere aggregation of non-interlocking parts. But treating it as an aggregation with no new resultant function shows how really inventive, when duly appreciated, the new combination was. It took original thought to conceive and effort to embody the concep-

tion in practice. The effect of the novel combination of the two well known types of coils would occur only to the inventive mind, for other types of mind would naturally suppose that, used conjointly, they would operate in the old way. But the outcome proved otherwise. Moreover, the union of the two—one enveloping the other—only came after attempts for years to improve cable release. Enveloping the pusher member with a spring was known. The rigidity of a close-wound coil was known. So also was the expansibility of a loose-wound coil. Yet, strange as it seems, no one, prior to Gray, thought of nesting the former inside the latter. And when Gray disclosed it, as he did when he sent one of his devices to the defendant, it was jacketed by a textile cover. The defendant evidently could not understand how the rubber-like flexibility was effected and Gray's testimony, while not of facts, has the impress of certainty when he testified: 'The cover was evidently slitted to see what was in the inside, to see the construction.' They cut it open to see by what means he did it, at once recognized its worth, discarded their then type and adopted his. Now that it has proved its worth, his device deserves judicial recognition and its infringement due money reparation. The proofs show defendants have profited largely from it."

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"It is further argued, however, that, supposing the devices to be sufficiently described, they do not show any invention; and that the combination set forth in the fifth claim is a mere aggregation of old devices, already well known; and therefore it is not patentable. This argument would be sound if the combination

claimed by Webster was an obvious one for attaining the advantages proposed,—one which would occur to any mechanic skilled in the art. But it is plain from the evidence, and from the very fact that it was not sooner adopted and used, that it did not, for years, occur in this light to even the most skilful persons. It may have been under their very eyes, they may almost be said to have stumbled over it; but they certainly failed to see it, to estimate its value, and to bring it into notice. Who *was* the first to see it, to understand its value, to give it shape and form, to bring it into notice and urge its adoption, is a question to which we shall shortly give our attention. At this point we are constrained to say that we cannot yield our assent to the argument, that the combination of the different parts or elements for attaining the object in view was so obvious as to merit no title to invention. Now that it has succeeded, it may seem very plain to any one that he could have done it as well. This is often the case with inventions of the greatest merit. It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result, never attained before, it is evidence of invention. It was certainly a new and useful result to make a loom produce fifty yards a day when it never before had produced more than forty; and we think that the combination of elements by which this was effected, even if those elements were separately known before, was invention sufficient to form the basis of a patent."

This case recognizes the rule that a combination of old elements may involve invention, if the improvement made by combining them in a different way was one which would not occur to an ordinary mechanic skilled in the art, and to determine whether or not it would so occur to an ordinary mechanic regard must be had to the question whether per-

sons skilled in the art had struggled to make the improvement in question and for a considerable period of time had failed to make it.

As well expressed in the extract from the opinion of the Court of Appeals, above quoted, the new combination of the open coil spring tube with a closed coil plunger would only occur to the inventive mind. It was not such a change as would be obvious to any mechanic skilled in the art. The device patented by petitioners, as disclosed in the Dakin patent only a few months before respondent's application was made (although unknown to him at the time), shows a stiff and unsatisfactory release, made with a closed coil tube and a closed coil plunger.

An examination of the exhibits shows that whereas a closed coil spring is very flexible, if unconfined by a jacket, it is very stiff when surrounded with a fabric jacket, as it must be when used as the sheath or tube in a cable release. On the other hand, an open coil spring so enclosed retains its flexibility. A coiled spring, however, when used as a plunger, is entirely unconfined, as it is made to pass to and fro through the tube; it, therefore, retains its flexibility even though closely coiled, as it must be to communicate endwise motion. This is simple enough to see now but that it was not obvious to any skilled mechanic is apparent from a consideration of the history of the art.

We invite the attention of the Court to the German patent to Wermann of 1902, one of petitioners' exhibits (R., Vol. II, p. 332). This shows a combination of a closed coil plunger with a closed coil spring tube but no jacket.

The next step in the art was by Edwards and Watson, as disclosed by patents granted in 1905 and 1906 (R., Vol. II, pp. 288, 302, 309 and 322). In the earliest Edwards and Watson patents of 1905 (R., Vol. II, pp. 302, 309 and 322)

it appears that the inventors had taken a step forward in devising an open coil spring tube but they used it with a straight or stranded wire plunger, not conceiving that it would be operative with a closed coil spring as a plunger although the Wermann patent was before them. In the specifications in one of these patents, the inventors almost hit upon the combination afterwards disclosed by respondent, but failed to reach it.

In the latest patent which Edwards obtained (1906, R., Vol. II, p. 288) the same structure is shown and those portions of the specifications which petitioners argued in the district court were an anticipation of respondent's device are entirely omitted, showing that the idea which he so nearly grasped had entirely escaped him.

The next patent shown in the record is Duryea, 1913 (R., Vol. II, p. 295). The structure shown is the same as in the Edwards patent, to wit: a closed coil spring tube and a wire plunger with certain alleged improvements. With both Wermann and Edwards before him, including the specifications petitioners rely upon, he did not conceive of respondent's device.

Finally we come to the Dakin patent, developed by an employee of the petitioners immediately prior to respondent's filing date (R., Vol. II, p. 299). This release shows a closed coil spring tube and closed coil plunger. This was a return to the Wermann idea with certain improvements. There is no question that petitioners' patent attorneys had before them at this time the Edwards patents and the Wermann patent and many others, including the specifications which petitioners argued in the district court anticipate respondent's patent. There is no question that the entire purpose of their efforts was to secure a more flexible release (Christy, R., p. 106).

There is no question that respondent's release which they afterwards adopted when he disclosed it to them was better than the Dakin release, yet they patented (Dakin being an employee of petitioners) and made the Dakin release until respondent's disclosure.

In view of these facts it is idle for petitioners to argue that the combination which respondent made for the first time was only such as an ordinary skilled mechanic could have devised without the use of invention. **If it were so, why had they not discovered it?**

Many inventors, including petitioners' staff, had been working on the problem for many years and had failed to solve it. The fact that it seems simple now that it has been disclosed is no answer to the claim of invention.

The language of this Court in *Diamond Rubber Company v. Consolidated Rubber Tire Company,* 220 U. S. 428, 434, is applicable to this case:

> ". . . It [the invention] possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent. Its simplicity should not blind us as to its character. Many things, and the patent law abounds in illustrations, seem obvious after they have been done, and, 'in the light of the accomplished result', it is often a matter of wonder how they so long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius.' . . . Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention.

But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration."

". . . And we may say in passing the elements of a combination may be all old. In making a combination the inventor has the whole field of mechanics to draw from. *Leeds and Catlin v. Victor Talking Mach. Co.*, 213 U. S. at page 318." (P. 443.)

In *The Barbed Wire Patent*, 143 U. S. 275, it appeared that the improvement covered by the patent in suit was nothing more than a slightly different method of attaching a barb to a wire fence, but this difference, slight as it was, made the fence a commercial success. It was claimed that the elements were all old, and the slightly different arrangement of the barb did not involve invention. This Court in that connection used the following language (pp. 282-283):

"Under such circumstances courts have not been reluctant to sustain a patent to the man who has taken the final step which has turned a failure into a success. In the law of patents it is the last step that wins. It may be strange that, considering the important results obtained by Kelly in his patent, it did not occur to him to substitute a coiled wire in place of the diamond shape prong, but evidently it did not; and to the man to whom it did ought not to be denied the quality of inventor. There are many instances in the reported decisions of this court where a monopoly has been sustained in favor of the last of a series of inventors, all of whom were groping to attain a certain result, which only the last one of the number seemed able to grasp."

Thereupon quoting with approval from *Loom Company v. Higgins*, above cited.

The Court of Appeals referred to the fact that the defense of lack of invention was evidently an after-thought, as it had not been relied upon at the trial before Judge Dickinson, reciting the following from Judge Dickinson's charge (R., p. 124):

> "I have called your attention to these three elements—invention, utility, novelty. Invention, as I understand it, is not in real controversy here. So, you need not trouble yourselves about it."

Petitioners criticize this statement (Petitioners' Brief, p. 45) because, as they point out, they raised this question in points for charge. The fact is, however, that no reference was made to this defense at the trial before Judge Dickinson, and this is indicated by his statement to the jury. Further, the statement which he made was one of fact, namely, that invention was not in controversy. If this was an erroneous statement of fact, it was the duty of petitioners to have requested the court to correct it.

An examination of the record (R., pp. 131-135) shows that while counsel for petitioners requested the court to make certain corrections and additions to his charge, nothing whatever was said in reference to this point. It was, therefore, accepted by counsel for petitioners as correct, as in fact it was.

It is no answer to say that in their numerous points for charge, they had raised this point and considered the charge a denial of the points to which they took exceptions. The statement by the court was, as a matter of fact, that this point was not in controversy. As no move was made to ask the court to correct the statement as erroneous, its accuracy cannot now be questioned.

The fact that petitioners did not raise the defense of lack of invention at the first trial is a strong indication

that they did not consider it sufficiently persuasive to rely upon and only brought it in as an after-thought, when other defenses appeared under the evidence to be invalid.

It is respectfully submitted that the Court of Appeals was correct in finding that the facts did not support the conclusion of the district court that no invention was involved in devising the improvement which was the subject matter of respondent's patent.

(b) Claims 1 and 2 of the Patent Are Properly Interpreted as Calling for a Closed Coil Plunger.

Passing from the question of alleged lack of invention (the only point of a meritorious nature urged by petitioners, from beginning to end of this case) petitioners pass to certain technical defenses which they allege render claims 1 and 2 of the patent invalid.

The first is that, although the claims in the patent, and the specifications to which they refer, plainly and unmistakeably describe the invention of the patentee, respondent should not be allowed to interpret claims 1 and 2 by reference to the specifications.

Claims 1 and 2 define the plunger in general terms, with a reference to the specifications for a more complete description, and it is this description which petitioners argue should not be read into claims 1 and 2, and if not so read it is argued that these claims are anticipated by earlier patents.

Claim 1 of the patent reads as follows (R., Vol. II, p. 210):

> "1. In a mechanism of the nature described, the combination of two heads, a barrel on the outer head, a coiled spring wire tube having spaced coils and being located between said heads and engaging said

barrel, flexible means joining said heads and definitely holding them at a fixed distance from each other while said spring wire tube is partially compressed endwise, a stem extending slidably through one of said heads and having limited outward movement, a slide member in the other of said heads, and means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member, substantially as described."

Claim 2 for purposes of this discussion is identical. It may be conceded that these claims would be anticipated by earlier patents, were it not for the incorporation therein of the description contained in the specification of the

"means intervening said stem and said slide member for the transmission of endwise motion from said stem to said slide member."

The specifications contain the following (R., Vol. II, p. 210):

"This mechanism comprises two important features. One of these is the closely-wound coiled wire transmission tube, J, connected with the stem, F, and the slide member, I, whereby there may be transmission without lost motion. The other of these features is the forming of the outer coiled wire tube, C, in such manner as to permit bending the tube without material separation of the coils at the outer side of the curve, the spacing between the coils permitting the coils to approach each other on the inner side of the curve while the tube is being bent. The member, I, being free to slide, the adjacent end of the inner wire tube, J, is free to move endwise when the mechanism is being bent. In this manner, the inner tube, although closely-wound, adapts itself to the bending without kinking.

"Practice has shown that a mechanism of this construction may be bent an indefinite number of times

without kinking or otherwise disabling the coiled wire tubes."

A reference to the drawing shows very clearly the construction of this plunger which is the only one mentioned or described in the specifications, to wit, a closely coiled wire tube of a smaller diameter than the open coiled tube surrounding it and through which it operates.

This patent, having been issued on September 2, 1919, follows the older practice whereby the claims refer to the specification for a precise description of the element considered most important, in this case, the inner tube, forming the plunger.

That the claims should be read to include therein this precise description, thereby rendering them valid, is fully sustained by authority. It has been held in many cases that the expression "substantially as described" refers back to the specification for qualification of the claim in which it appears. Thus, in *Seymour v. Osborne,* 11 Wall. 516, 547, this Court said:

> "Founded, as the defence is, upon an obvious misconstruction of the claims of the several patents, it does not seem to require much explanation. Omit the words 'substantially as described,' or 'substantially as set forth,' and the question presented would be a very different one, but inasmuch as those words, or words of equivalent import, are employed in each of the claims, the defence is without merit. Where the claim immediately follows the description of the invention it may be construed in connection with the explanations contained in the specifications, and where it contains words referring back to the specifications, it cannot properly be construed in any other way."

In *The Corn-Planter Patent,* 23 Wall. 181, 218, this Court held that Reissue Patent No. 1036 was valid and infringed on the theory that the last clause of the claim "substantially as and for the purpose set forth" referred back to the specification for qualification of the claim and the several elements of which the combination was composed.

In *Westinghouse v. Boyden Power Brake Co.,* 170 U. S. 537, the Court said (p. 558):

> "There are two other facts which have a strong bearing in the same connection, and preclude the idea that this can be interpreted as a claim for a function, without reading into it the particular device described in the specification.
>
> "One of these is that the claim is for a triple-valve device, etc., for admitting air from the main air-pipe to the brake-cylinder, 'substantially as set forth.' These words have been uniformly held by us to import into the claim the particulars of the specification, or, as was said in *Seymour v. Osborne,* 11 Wall. 516, 547, 'where the claim immediately follows the description of the invention, it may be construed in connection with the explanations contained in the specifications, and where it contains words referring back to the specifications, it cannot properly be construed in any other way.' In that case it was held that a claim which might otherwise be bad, as covering a function or result, when containing the words 'substantially as described,' should be construed in connection with the specification, and when so construed was held to be valid. To the same effect is *The Corn Planter Patent,* 23 Wall. 181, 218."

This principle has been reaffirmed in *Hobbs v. Beach,* 180 U. S. 383, 400; *Singer Company v. Cramer,* 192 U. S.

265, 284; and *Eibel Process Co. v. Minnesota, etc., Paper Co.*, 261 U. S. 45, 70, wherein the Court held:

> "Their new adjustment is part of a new combination and the words substantially as described limit them to a combination including the elements included in the first three claims."

The effect of this was to transfer limitations appearing in the first three claims of the patent involved in the suit to claims 7 and 8 because these latter claims included the expression "substantially as described."

In the quite recent case of *Smokador Mfg. Co. v. Tubular Products Co.*, 31 F. (2d) 255, 256, 257, the Circuit Court of Appeals (2d Circuit) said:

> "'In United States patent No. 1,364,892, to Schulte & Weite, there is shown an ash tray, a tube descending to a waste receptacle at the base, which is enveloped by a skirt attached to the lower end of the tube. In the Schulte & Weite device, the ashes are emptied by a shutter in the bottom of the base, operated by a wire running down to the shutter from the top of the stand. It seems evident that the slight variations of the patent in suit from the prior structures do not merit a patent, unless the waste receptacle be limited to one composed of glass.
>
> "But the glass construction disclosed in the specification has manifest advantages. It renders the contents of the receptacle at once visible, without removal of the jar. In other words, a porter in a hotel can turn up the stand and see through the transparent glass whether any tobacco refuse is in the receptacle. If none is visible, he need not unscrew the jar, as he would have to do in the case of a stand that had not a transparent receptacle. The device manifestly saves time and labor. Moreover, a frangible substance like

glass would not, we think, readily suggest itself for a receptacle, and such a substance never seems to have been used for the purpose prior to the time when Fleming embodied the idea in the patent in suit. Indeed, the first thought of such a receptacle might well have been negatived by the consideration that glass would expose to view the dirty contents of receptacles in stands that had been used since cleaning. The ordinary artisan thinks in terms of 'use and wont'. To substitute glass for a prior, and what we may justly regard as a more obvious, form of container, and to shield it from sight, except when the stand is turned up for examination, seems to us a patentable step. If the advantages of doing what Fleming accomplished had been already apprehended, the means to attain them would perhaps be too simple to deserve the name of invention, but the apprehension of the labor-saving, convenient, and neat device disclosed in the patent in suit involved more than the work of a routine mind.

. . . . . .

"The claims should be limited to a glass receptacle, and this limitaton may properly be made, where the claims as drawn are too broad, and the invention embodied in the claims is limited as disclosed in the specification. A meritorious invention disclosed in the specification should be saved, in spite of broad claims, by such a limitation. Fowler & Wolfe Mfg. Co. v. McCrum-Howell Co. (C. C. A.) 215 F. 905; Radio Corporation of America v. Twentieth Century Radio Corporation (C. C. A.) 19 F. (2d) 290.

"We accordingly hold the patent valid and infringed."

A similar case is *Mantle Lamp Co. of America v. George H. Bowman Co.*, 53 F. (2d) 441 (C. C. A. 6), wherein it was held, in interpreting the claims for an improved heat

insulating receptacle, that the specifications should be referred to in order to construe the claim for a bond between the two members as meaning a bond made of insulating material.

We therefore conclude that claims 1 and 2 of the patents should be read so as to include therein the plunger described in the specifications, namely, a closely coiled wire tube. So read, the claims are sufficiently narrow to avoid the claim of anticipation and are valid.

(c) Nothing Occurred in the Patent Office Which Prevents Respondent From So Reading These Claims; There Was No Estoppel and No Abandonment of This Essential Feature of the Invention.

The petitioners argue, however, that although ordinarily respondent might be entitled to read claims 1 and 2 so as to call for a closed coil tube as a plunger, he cannot do so in this case because of certain proceedings which took place while the case was going through the Patent Office.

There are two grounds, and two grounds only, upon which it is claimed or can be claimed that respondent is prevented from properly interpreting his claims on account of anything which occurred while the case was going through the Patent Office. The first is that he was estopped by something which he there did from so interpreting claims 1 and 2, and the second is that he abandoned the closely coiled wire plunger as an element of his invention. Neither of these contentions has any validity.

Respondent, in his application as originally filed, presented the drawings and specifications exactly as they appear in the patent, and set forth twenty-six separate claims

which he requested should be allowed. Many of these claims were almost identical and they were far too numerous. The application was filed on February 7, 1918. (See File Wrapper, Defendant's Exhibit No. 1, R., Vol. II, p. 231.)

On February 25, 1918, the Examiner wrote a letter to respondent's attorney in which he allowed claims 23 and 24 and rejected all the rest on certain patents cited, at the same time stating that the claims were excessive in number, "many of them of the same scope and substantially duplicates." Claims 23 and 24 were afterwards numbered 5 and 6 and were ultimately allowed exactly as they now appear in the patent without any intervening rejection or amendment. (File Wrapper, p. 19, R., Vol. II, p. 251.)

By letter dated May 23, 1918, respondent's attorney, replying to the letter of the Examiner, made certain amendments to the claims, some of them mere changes in phraseology, and, with special reference to claim 1 now under consideration, inserted the words "a barrel on the outer head" which now appears in the second and third lines of this claim. In addition, this claim was amended to include the expression "and engaging said barrel," this with reference to the spring casing. No other amendments to claim 1 were made. Similar amendments were made in the other claims, some of which will be more particularly discussed later. (File Wrapper, p. 21, R., Vol. II, p. 253.)

It may be conceded that the action of the applicant in amending claim 1 instead of taking an appeal, as he might have done, would estop him from afterwards asserting a claim without the element added by amendment, or such a construction of his claim as would be equivalent thereto. *Smith v. Magic City Club*, 282 U. S. 784; *Morgan Envelope Co. v. Albany etc. Paper Co.*, 152 U. S. 425, and other cases

cited by petitioner. The same is true of the other amended claims.

It by no means follows, however, that respondent cannot rely upon the rule above referred to permitting him to read into his claim the provisions of the specification.

It is well settled that where a patentee amends his claim after rejection upon a reference to a prior patent, he is not estopped from arguing for the validity of his patent upon any legal grounds, so long as he does not argue that the claim after amendment means the same as before amendment.

In *National Hollow Brake-Beam Co. v. Interchangeable Brake-Beam Co.*, 106 Fed. 693, 714, the Circuit Court of Appeals (8th Circuit) said:

> " . . . It is true that if a patentee acquiesces in the rejection of his claim on references cited in the patent office, and accepts a patent on an amended claim, he is thereby estopped from maintaining that the amended claim covers the combinations shown in the references, and from claiming that it has the breadth of the claim that was rejected. [Citing among other cases, Morgan Envelope Co. v. Albany Perforated Wrapping Paper Co., 152 U. S. 425, 429]. But this is the limit of the estoppel. One who acquiesces in the rejection of his claim because it is said to be anticipated by other patents or references is not thereby estopped from claiming and securing by an amended claim every known and useful improvement which he has invented that is not disclosed by those references."

It may be conceded that the Examiner thought that respondent's claim would not be valid without the inclusion of the barrel, and it may be further conceded that the barrel was not a new element. If, however, the Examiner was

mistaken in believing that the addition of the barrel was necessary to save respondent's claim, and he clearly was, this does not prevent respondent from relying upon the particular combination which he disclosed to sustain the validity of his patent, notwithstanding the Examiner may have been of a different opinion.

It has been held that the statement of an erroneous opinion or conclusion by an Examiner cannot prejudice the right of a patentee. To this effect is the decision in the case of *Godwin Co. v. International Steel Tire Co.*, 2 F. (2d) 198, 199, in which the court said, among other things:

> "The conclusion of the Examiner to grant a particular claim, like the conclusion of an equity trial court to enter a particular decree, will be approved, if it was right, although the reason given is not sound."

It is well settled that whatever the view of the Examiner may have been, respondent, although he is estopped from urging that his claim is broader than that allowed, **is not prevented from relying upon any element or elements in his claim which render it valid.**

In the case of *Godwin Co. v. International Steel Tire Co.*, 2 F. (2d) 198, 199, *supra*, the Circuit Court of Appeals (6th Circuit) said:

> "In its progress through the Patent Office claim 4, with others, was rejected on reference to Freese. It was thereupon amended to include the guard limitation finally found in it, 'extending to the upper edge of the roadway and forming a boundary therefor,' and it was pointed out that the application was distinguished from Freese by this additional limitation. It is said that since there was no invention in this mere limitation or modification, and that since the applicant rested his case

thereon, he cannot now be heard to say that invention may be found elsewhere in, or in connection with, the device.

"The familiar rule of estoppel by Patent Office proceedings is invoked. This rule does not reach the case. The patentee may not later have such a construction of his claim that it will cover the device which has been thus protected by his confession and avoidance; but so long as he does not seek thus to broaden his claim, we do not know of any principle or authority which would bar him from claiming that his device was in fact patentable for other reasons than the one shown by his amendment."

In *Hildreth v. Mastoras*, 257 U. S. 27, this Court held that where one of the claims in a patent application was cancelled on a reference to another patent which on examination by the Court was observed not to anticipate the cancelled claim, such cancellation was of no importance and could not affect the interpretation of other claims. The Court said (p. 33):

"Counsel for the respondent in seeking to narrow the construction of the broad claim of Dickinson rely on the circumstance that one of Dickinson's claims in the Patent Office was cancelled on a reference to Firchau. . . . However, . . . as neither Firchau nor anyone else has shown . . . the fundamental element of the Dickinson invention, the cancellation does not seem to us important or to require a narrowing of Dickinson's claim. . . ."

As nothing so far transpiring in the Patent Office can be invoked to estop respondent from reading into his claims the coiled wire tube described in the specifications, petitioners rely upon further proceedings. At the close of his

letter to the Examiner above noted in which he amended certain of his claims, respondent requested the Examiner to point out which of his claims were considered duplicates and should be eliminated. (File Wrapper, p. 24, R., Vol. II, p. 256.)

Under date of June 15th, the Examiner replied to this letter, allowed, *inter alia,* claims 1 and 4, as amended, of the application, these being claims 1 and 2, respectively, of the patent, and rejected many of the claims as being substantially identical with other claims allowed. This was particularly true of claim 17 upon which petitioners especially rely. The Examiner's action in respect to this claim was in the following words:

> "Claims 17 to 22 are rejected as not patentably distinct from claims 1 and 4 allowed. The use of the 'coiled wire tube' for the 'intervening means' defined in claim 1 is not patentable in view of the German patent of record. In other words—applicant merely adds a limitation found in the prior art—to allowed claims which is not patentable." (File Wrapper, p. 26, R., Vol. II, p. 258.)

To this letter respondent's attorney replied under date of June 17th cancelling certain claims, among them claim 17 and requesting reconsideration of claims 27 and 28. (File Wrapper, p. 27, R., Vol. II, p. 259.) To this letter the Examiner replied under date of July 18th, allowing all of the claims now contained in the patent and rejecting certain others, principally because these latter claims did not patentably differentiate from the claims allowed. These are the only relevant proceedings in the Patent Office. (File Wrapper, p. 28, R., Vol. II, p. 260.)

Petitioners argue, that respondent is estopped from reading into claims 1 and 2 that portion of the specifications

which limited the "means intervening" to a coiled wire tube plunger, because, after claims 1 and 2 were allowed by the Examiner, respondent acquiesced in the rejection of claim 17, which specifically defined the intervening means, as in substance identical with claims 1 and 2 and therefore superfluous.

It is respectfully submitted that this conclusion is untenable and is unsustained by authority. A case of estoppel has not been made out. The theory of estoppel arising out of proceedings in the Patent Office is that an applicant, having accepted an amendment to his claim, **in order to get another**, or **who has accepted cancellation of one claim in order that another may be granted**, is estopped from contending thereafter that the amended claim has the same meaning as it had before it was amended, or that the granted claim has the same meaning as the cancelled claim.

All of this, however, is dependent upon a change of position by the Examiner; upon a bargain between applicant and the Examiner whereby the Examiner gives something to the applicant in consideration of an amendment or cancellation, as the case may be.

But no such doctrine can be relied upon where, as here, nothing of the sort took place.

Respondent's **claims 1 and 2 had already been allowed** before the Examiner advised respondent that he considered claim 17 substantially identical with claims 1 and 2 and therefore superfluous. It is plain that **the allowance of claims 1 and 2, was not made conditional upon the cancellation of claim 17.**

As was held in the cases of *Bundy Mfg. Co. v. Detroit Time-Register Co.*, 94 Fed. 524, 543, and *Frey v. Marvel Auto Supply Co.*, 236 Fed. 916, 921, 922:

> " . . . to be estopped by the action of the Patent Office, a patentee must be shown to have surrendered something which he now claims in order to obtain that which was allowed."

In all of the cases cited by the petitioners in their brief, it was distinctly held that estoppel arises as the result of the applicant's revision of a claim **in order to get a patent.**

Thus, in *Weber Elec. Co. v. Freeman Elec. Co.*, 256 U. S. 668, 677, this Court said:

> ". . . Having thus narrowed his claim against rotary movement in order to obtain a patent, the patentee may not by construction . . . give to the claim the larger scope. . . ."

Also, in *I. T. S. Rubber Co. v. Essex Rubber Co.*, 272 U. S. 429, 443, the Court said:

> ". . . If dissatisfied with the rejection he should pursue his remedy by appeal; and where, in order to get his patent, he accepts one with a narrower claim, he is bound by it."

See also *Smith v. Magic City Club*, 282 U. S. 784.

In *Morgan Envelope Co. v. Albany Paper Co.*, 152 U. S. 425, particularly relied upon by the petitioners, it appeared that applicant had presented a claim in a narrow form, and the same having been rejected by the Patent Office, he thereafter presented it in a broader form and the same was allowed. The Court observed (p. 429):

> "Why the claim of the present patent was allowed after the rejection of the narrower claim does not appear."

And, indeed, it would be almost impossible to imagine a reason why it should have been. But the sentence quoted

above from the opinion of the court shows clearly that **the narrower claim was first presented and rejected,** and in view of such rejection a broader claim **was thereafter submitted and allowed.** The one was substituted for the other. This was, therefore, a case in which the rule of estoppel was properly applied, although the point was not necessary to the decision of the court.

In the case at bar, however, claims 1 and 2 were allowed before the Examiner directed the erasure of claim 17; therefore they were not allowed in substitution for claim 17 and there can be no estoppel.

Moreover, it has been held that the cancellation of a claim in an application for a patent because it is substantially identical with a remaining claim does not affect the validity of the latter. In the case of *Kryptok Co. v. Stead Lens Co.*, 207 Fed. 85, 89 (affirmed 214 Fed. 368, C. C. A. 8), the Court said:

> ". . . defendant insists that the cancellation of claim 3 in response to this objection limited and narrowed original claim 1, now the contested claim of the first patent in suit. . . .
>
> "A comparison of this claim with the remaining claim of the first patent in suit, heretofore quoted, will disclose that in all particulars substantial to this controversy they are the same. This being true, the cancellation of the superfluous third claim, substantially identical with the first, would not affect the latter. Bullock Elec. Mfg. Co. v. Crocker-Wheeler Co. (C. C.), 141 Fed. 101, 110."

It is argued by petitioners that because the examiner said in his letter to applicant that

> "the use of the 'coiled wire tube' for the 'intervening means,' defined in claim 1 is not patentable in view of the German patent of record"

a direct issue was raised between the applicant and the Patent Office as to whether the use of such coiled wire tube was or was not patentable.

In the first place it should be pointed out that such an expression of opinion by the examiner, where there is admittedly no estoppel, is of no importance whatever, and will not be considered by the court in determining the meaning of the patent after it has been granted.

In *Campbell Metal Window Corp. v. S. H. Pomeroy & Co.*, 300 Fed. 872, 874 (S. D. N. Y.), Learned Hand (D. J.) said:

> ". . . I do not understand that this case [referring to Goodyear, etc., Co. v. Davis, 102 U. S. 222] meant to require me to go through all that was said in the endless communications between applicant and Examiners to gather piecemeal the intent of the grant, as though I were construing a correspondence. If so, what is the purpose of the final formal instrument? . . . In any event, it is well settled by authorities binding upon me that in this circuit we do not look to such exterior expression of intent, but treat a patent as we should a will, a deed, or any other instrument intended to be a final memorial of the parties' intention [citing cases.]"

In *Westinghouse Elec. Co. v. Condit Mfg. Co.*, 194 Fed. 427, 430 (C. C. A. 2), the Court said:

> ". . . But, as a general rule, the interpretation to be placed upon the claims and specification of a patent is to be determined from the language of the grant, and the proceedings in the Patent Office are quite immaterial. Such is the situation in the present case. Original claims were rejected in the Patent Office. Thereupon the applicants, instead of limiting their claims, substituted broader ones which were ac-

cepted. Presumably the examiner changed his mind. But, whatever be the explanation of his position, nothing whatever is shown to work an estoppel against the patentees. Instead of surrendering something which they now claim to obtain that which was allowed, they claimed something more and got it."

But assuming for the moment that the remark is of importance, it did not, as petitioners argue, raise an issue whether the substitution of a coiled wire tube plunger for a straight wire, in the combination, was patentable.

The statement of the examiner was that the use of the coiled wire tube **was not in itself patentable**, and he therefore erroneously concluded that, added to the elements defined in claim 1 without reference to the specifications, it was mere surplusage and did not change the claim substantially. **This must be so** because he found that claim 17 was in substance identical with claim 1, and therefore should be erased as superfluous.

This was no more than a re-assertion of the examiner's opinion earlier expressed, that neither claim 1 nor claim 17 was valid without the addition of the barrel, but that with the barrel both were valid and were in substance the same. In this, as we have seen, the examiner was in error. But that does not prevent respondent from establishing the validity of his claim by referring to the specifications.

The argument of petitioners when carefully analyzed does not make sense. If claim 17 was rejected on the theory which petitioners have advanced, that the claim in its narrowed form was anticipated by an earlier patent, certainly claim 1 should also have been rejected for in its broader form or when narrowed by reference to the specification it would also most certainly be anticipated.

Petitioners assert that there was directly raised between the applicant and the examiner the question whether a coiled wire tube as a plunger could be included in the claim, because the examiner stated that it had been anticipated by the Wermann patent and was of itself not patentable. But this would not be a sensible objection to granting this claim, since he had already granted a claim broader in terms than this (but which by reference to the specifications would be identical), which therefore necessarily must also have been anticipated by the Wermann patent as well as others.

Logic must therefore reject the argument of petitioners that the direction to respondent to erase claim 17 involved a ruling that a coiled wire tube could not be included because anticipated by Wermann and that respondent's failure to protest was an acceptance of this view. His erasure of the claim was a mere acceptance of the examiner's ruling that it was in substance the same as claims 1 and 2 and was superfluous.

Finally petitioners advance a specious argument based on *United States Repair & Guarantee Co. v. Assyrian Asphalt Co.*, 183 U. S. 591, that respondent abandoned the coiled wire tube as a plunger by the cancellation of claim 17. This argument impressed the district court and he adopted it in his decision.

In the Assyrian Asphalt case plaintiff had procured a patent for a method of repairing asphalt pavements. The specification of the patent described the method merely as requiring the application of heat to the spot to be repaired in such a way as to soften the edges and enable the repair to be made in such fashion that the new portion would be firmly welded to the old. A form of apparatus was de-

scribed which included burners for projecting a strong blast of heat against the surface of the asphalt but the patentee expressly stated that:

> ". . . The heating of the surface may be accomplished in various ways and by means of various forms of apparatus, and while I have herein shown but one form for accomplishing the result, yet I would have it understood that I do not limit myself to any particular form of apparatus for carrying out my invention" (p. 593).

The claim asserted to be infringed was as follows:

> "1. The method of repairing asphalt pavements, which consists in subjecting the spot to be repaired to heat, adding new material and smoothing and burnishing it, substantially as described" (p. 594).

A third claim, containing the limitation "a blast of heat," in lieu of the unqualified word "heat," had been withdrawn by the patentee upon a ruling of the Patent Office that the first and third claims were the same in substance and could not both be permitted in the same case.

This Court held that a prior French patent completely anticipated the method of plaintiff, if it was construed broadly to mean merely the application of heat to the spot to be repaired. Plaintiff thereupon argued that his claim should be limited to a special method of applying the heat in the form of a blast, as it was applied by his burner. It is obvious without discussion that this construction was impossible. There was not a line in the patent or the specifications which suggested that the invention or the claim was limited to that particular method of applying heat, and this Court said (p. 594):

> ". . . considering the language of the claim and of the specifications, it seems impossible to escape the

> conclusion that the invention claimed is for the application of heat to the spot to be repaired. And the patentee did not confine himself to the particular apparatus he described. That, he said, was 'one form of accomplishing the result.' "

This completely disposed of the case. The patentee had not obtained a patent for a method involving a blast of heat. There was no suggestion anywhere in his specifications that this was the case, and therefore necessarily he was out of court.

The Court, however, at the conclusion of its opinion, used certain language which was paraphrased by the district court as defeating the claim of respondent in this case. It appeared that the Patent Office had ruled that "the first and third claims were the same in substance and could not both be permitted to remain in the case." In view of this ruling, this Court quoted with approval the language of the Court of Appeals as follows (p. 601):

> "Having voluntarily abandoned the claim for a method limited to the use of 'a blast of heat,' the patentee or his assignee may not now insist that a broad claim, containing no suggestion of such intention, shall nevertheless be subjected by construction to the same restriction."

It will be observed that the conclusion of the Court was that the patentee had "voluntarily abandoned" his claim for a method based on the use of a "blast of heat," and this in turn was based upon the fact that, as the Court expressed it, there was "no suggestion" in the other claims or in the specifications of an intention to limit his method to a blast of heat. The applicant had therefore **given up the only claim which could possibly be construed to be limited**

to a blast of heat, and the Court held this was an abandonment.

In the case at bar it cannot be argued that the action of the plaintiff in cancelling claim 17, after the Examiner had stated that it was in substance identical with claims 1 and 2, **already allowed**, was an abandonment of a claim for a coiled wire tube as the intervening means, for the reason that the coiled wire tube as the means intended is clearly described, and is the only means described, in the specifications, and the coiled wire tube so described remained in the patent. Other remaining claims 5 and 6 describe it specifically.

Nowhere in this patent is there any suggestion that the applicant had any other intervening means in mind, and he made no attempt to claim any other. There was therefore no abandonment.

Attention is called to the fact that in the Assyrian Asphalt case it appears from the opinion of the Court, above quoted, that the applicant was required to elect between claims 1 and 3, the first of which was broad in form and the second narrower, and that he chose to accept the first and reject the second. If the first had, as in the case at bar, referred to the specifications for a description of the method, and that description had shown that the only method intended to be used involved a blast of heat, the decision would have been different.

As it stands, however, and as is clearly disclosed in the opinion of this Court, applicant was required to elect. Claim 1 was not susceptible of being construed as limited to a blast of heat; claim 3 was so limited, and the claimant chose to abandon the limited claim and to accept the broad claim. It is submitted that this case cannot control the case at bar.

It may not be improper to add that this Court in making its decision said (p. 601):

> "This point, in view of the reservation already considered, is unimportant and might be passed."

It is respectfully concluded on this branch of the case, therefore, that there is nothing in the proceedings in the Patent Office which precludes the plaintiff from referring to the specifications to construe and narrow claims 1 and 2, thereby rendering them valid.

4. THE CONTENTION MADE IN PETITIONERS' BRIEF THAT THEY HAD CONCEIVED OF RESPONDENT'S DEVICE BEFORE HE DISCLOSED IT TO THEM IS IMMATERIAL TO THIS APPEAL, BUT THE ADMITTED FACTS DO NOT SUSTAIN THIS CONCLUSION.

Toward the end of their brief, petitioners, although admitting its immateriality to this appeal, allege (p. 42)

> "that the Eastman Company did not acquire knowledge of the accused releases from Gray".

There is not, and never was, any claim that the Eastman Company had devised respondent's device prior to his filing date. The allegations contained in the brief, therefore, relate only to the question of damages, not now in issue, but we think it desirable in the interest of accuracy to point out that they are not correct.

The record shows that on July 2, 1918, respondent sent to petitioners a sample of his release, for which an application for a patent was then pending. This is admitted in petitioners' brief, page 42. A little more than a week later,

this release was returned to respondent, having been cut open and examined; (See respondent's physical exhibit No. 8, a box containing this release).

With the release there was sent by petitioners to respondent a letter (R., Vol. II, p. 215) in which it was said:

> "... We find that this release is identical in practically every respect with the release which we have been marketing for some time."

and

> "Inasmuch as you mention having the matter of organizing a Company to market this device in your mind, it might interest you to know that we are perfecting our patents covering this construction."

Neither of these statements was true. The release which petitioners had been marketing prior to that date was the Dakin release covered by the Dakin patent (R., Vol. II, p. 298), which called for a **closed coil** spring outer tube whereas the improvement devised by respondent involved the use of an open coil tube. It was the Dakin device for which a patent had been applied for by petitioners; this was granted nearly a year later, i. e., March 18, 1919 (R., Vol. II, p. 300). Petitioners never applied for a patent on respondent's device or one similar thereto.

Petitioners argue, based on a number of mutilated papers taken from their records, that they were experimenting with the type of release covered by respondent's patent prior to the date of his disclosure to them (Petitioners' Brief, pp. 42-44). The papers upon which they rely are so-called lists of parts, being in effect specifications for the manufacture of releases. They appear in the record, Vol. II, pp. 274-280 inclusive;

all bear evidence of change and mutilation, and all except one were cancelled and discarded prior to respondent's disclosure. That one, not marked as cancelled and discarded (R., Vol. II, p. 275) shows on its face that when originally made "5/27/18", it called for a spring casing or outer tube according to drawing 9507, which is a closed coil spring casing in accordance with the Dakin patent (R., Vol. II, p. 225). The change from this drawing to drawing 15131, showing a spring casing, with an open coil, such as is used in respondent's release (R., Vol. II, p. 226) was evidently made at the date stamped at the bottom of this paper—"Apr. 12, 1920"; this was approximately the date that the manufacture of the respondent's device began in petitioners' plant (R., pp. 93-98).

It is difficult to see how petitioners can seriously argue that they knew of or had used respondent's device prior to his disclosure to them, in view of the letters they wrote him when he charged them with infringing his patent.

We refer the Court to a letter of Mr. Lovejoy, Vice-President of the Eastman Kodak Company, to respondent's representative, dated December 2, 1919 (R., Vol. II, p. 218), in which he says:

> ". . . The cable release which you sent us with your letter to Mr. Fell of June 21, 1918, was like a cable release which we had marketed many years previously, except in two features: First, the coils of the flexible casing were open, or separated, so as to give a spring effect; second, the inner thrust member, instead of being composed of twisted strands, was itself a miniature coiled tube."

The writer then goes on to say that they were familiar with both these features but made no claim that they were

familiar with any construction which combined them together. On the contrary, the letter is an express admission that this combination was new.

On October 31, 1923, Mr. Chapman, of the Eastman Kodak Company, wrote another letter to respondent (R., Vol. II, p. 220), in which, referring to the sample which had been sent them by respondent in 1918, he said:

> " . . . This cable release we found to be similar to cable releases which we had made and marketed for several years except for two features, both of which were not original with you. First, the flexible casing included an open coil spring, and second, the plunger of the cable release consisted of a closed coil spring."

Then, after referring to earlier patents, all of which have been discussed in this case, the writer continued (R., Vol. II, p. 221):

> "We feel that the circumstances outlined above furnish convincing evidence that the cable release which you submitted to us differed from those which we had had on the market for years only in these two ways, and that cable releases embodying the construction constituting these two differences are clearly shown in the prior art."

The writer of this letter, like Mr. Lovejoy, expressly admitted that respondent's combination was new, although claiming that the elements thereof (as is conceded) were old.

In the face of these letters, it is impossible for petitioners to argue with any conviction that they knew of respondent's type of release before he disclosed it to them. The release with which they were experimenting involved other combinations of these elements, either a straight wire

plunger or a combination of a closed coil plunger with a closed coil spring casing or outer tube.

The discussion regarding the question whether or not the Edwards patent would be infringed, if shipment were made to Europe (Petitioners' Brief, p. 44) related entirely to the use of a cable release consisting of an open coil spring casing and a straight wire plunger or thrust member.

As above noted all this is immaterial to the present appeal, but we could not allow the unfounded assertions made in the petitioners' brief, that respondent contributed nothing to their knowledge of the art, to go unchallenged.

CONCLUSION.

We therefore submit in conclusion—

1. The case was submitted to the district court for its decision upon a record already made up, consisting of facts either agreed upon or proven by undisputed evidence.

2. These included the ultimate facts necessary for a decision of the case, leaving to the court only the function of drawing conclusions by the application of legal principles to these facts.

3. The Court of Appeals correctly held that it had jurisdiction to review the record of the district court, to ascertain whether the judgment was supported by the underlying and undisputed facts.

4. The reasons averred in the petition for a writ of certiorari in this case, having been shown on further examination to have no existence, and in view of the fact that there was no final decision in the court below, the writ should now be dismissed without examination into the merits of the case.

5. The Court of Appeals correctly found that the judgment of the district court was not supported by the undisputed facts shown by the record and the judgment should be affirmed.

Respectfully submitted,

T. R. White,

Leon Edelson,

Counsel for Respondent.

SUPREME COURT OF THE UNITED STATES.

No. 709.—October Term, 1933.

Eastman Kodak Company, Eastman Kodak Company of New York, and Eastman Kodak Stores, Inc., Petitioners, *vs.* Charles B. Gray.	On Writ of Certiorari to the United States Circuit Court of Appeals for the Third Circuit.

[May 21, 1934.]

Mr. Justice McReynolds delivered the opinion of the Court.

In an action at law, respondent Gray alleged that the petitioners had infringed his patent for a power transmitting mechanism and asked damages. The patent contains six claims; he relied upon all except the fourth. A plea of the general issue and notice of special matters raised questions of novelty, invention and infringement.

The cause was first tried to a jury, Judge Dickinson presiding. Certain facts were stipulated; witnesses were examined by both parties; there were many exhibits. The jury found for respondent; the Judge granted a new trial because he deemed the charge inadequate.

Thereupon, the parties stipulated in writing "that trial by jury is hereby waived and that the case shall be submitted to the Court for decision upon the record already made, as if the testimony and exhibits offered in evidence at the trial before Judge Dickinson and a jury had been duly offered in evidence before the Judge who may be assigned to hear this case, subject to any objections which appear on the record, and that all motions made by either party at the said trial shall be deemed to have been made before the Judge trying the case, both parties to have the right of appeal as in other cases."

Afterwards, at a session held before Judge Kirkpatrick, the issues between the parties "came to be tried by the Court without a jury upon the record of the same case which had been previously tried before a jury and the Court the tenth to fourteenth days in-

clusive of December, 1931, the issue between the said parties having been tried by the Court without a jury on said seventeenth day of March, 1932, in accordance with a stipulation entered into by and between the attorneys for the respective parties, at which date, namely March 17, 1932, came as well the said plaintiff as the said defendants by their respective attorneys; and upon the trial the counsel for the respective parties offered their evidence as particularly set forth in the following stenographic notes of testimony and the stenographer's minutes attached hereto; and the evidence in the cause being closed the learned Trial Judge rendered his opinion and decision, in writing, as hereinafter set forth" . . . Judgment went for the petitioners here, July 16, 1932. A supporting opinion dealt generally with the issues. Near the end of it he said: "The statements of fact contained in this opinion may be taken as findings of fact. If separate findings of fact are desired the parties may submit requests in accordance herewith." And he thus summarized his conclusions:

"1. The combination of closed coil inner thrust member and open coil outer sheath member is not patentable because its elements were known to the prior art and no new mode of operation or functional relationship arises from putting them together.

"2. Claims 1 and 2 cannot be interpreted as calling for a closed coil inner thrust member in view of the file wrapper history of this patent.

"3. Claims 1 and 2 are anticipated.

"4. Claim 3 is not infringed.

"5. Claims 5 and 6 are invalid because United States patent No. 1,297,327 to Dakin and Underwood antedating the plaintiff's application discloses the method of attaching the thrust member to the stem claimed, and conclusion "1" applies to these claims."

Finally, he directed, "judgment may be entered for the defendant."

Counsel for Gray tendered a bill of exceptions "to the rulings, opinion and action of the said Court, and requested the seal of the Judge aforesaid should be put to the same, according to the form of the statute in such case made and provided." This was duly signed and sealed July 28, 1932. The bill contains the evidence presented and the minutes of the proceedings. It shows no exception to any ruling upon a motion presented by respondent

during the progress of the cause. The transcript shows the following docket entry opposite the date January 9, 1932: "Plaintiff's motion for judgment on the verdict and assessment of treble damages filed" without more. This is not enough to support the suggestion that a motion for judgment upon the whole record was duly presented and overruled accompanied by adequate exceptions.

August 15, 1932, respondent prayed and obtained allowance of an appeal to the Circuit Court of Appeals. The assignment of errors there stated in five separate paragraphs that the trial judge erred in finding as set out in conclusions 1, 2, 3 and 5 *supra*, and in granting the judgment.

Counsel for petitioner correctly affirm—"Examination of this bill of exceptions discloses that no request or motion was made, denied, and excepted to, or any like action taken during the progress of the trial, which presented to the trial court the question whether there was support in the evidence for the findings challenged by the assignment of errors or whether the undisputed evidence required contrary findings. The fact is that respondent made no request for any findings of fact or for any rulings of law at any time, either during the first trial before the jury, or during the progress of the second trial before the court, or even after the filing of the opinion directing judgment for defendants."

In the Circuit Court of Appeals petitioners unsuccessfully moved for dismissal of the appeal or affirmation of the challenged judgment. They pointed out the situation disclosed by the record, and relied upon *Fleischmann Construction Co.* v. *United States*, 270 U. S. 349. The court examined the record, held the patent valid and infringed, and reversed the challenged judgment. It declared: "In substance the trial was a quasi demurrer. No witnesses were examined. On final hearing neither party asked for any special findings of fact, for there were no disputed facts." This, we think was error. The motion to affirm should have been granted. The trial was not 'in substance a quasi demurrer,' All the essential facts were not stipulated, or agreed upon by counsel. To proceed upon the contrary view was improper.

In *Fleischmann Construction Co.* v. *United States*, 270 U. S. 349, 355, 356, 357, opinion by Mr. Justice Sanford, this Court considered and announced the proper interpretation of Sections

649 and 700, R. S. (28 U. S. Code Secs. 773, 875), copied in the margin.* Concerning civil causes tried without the intervention of a jury, we there said: "And it is settled by repeated decisions, that in the absence of special findings, the general finding of the court is conclusive upon all matters of fact, and prevents any inquiry into the conclusions of law embodied therein, except in so far as the rulings during the progress of the trial were excepted to and duly preserved by bill of exceptions, as required by the statute. . . . To obtain a review by an appellate court of the conclusions of law a party must either obtain from the trial court special findings which raise the legal propositions, or present the propositions of law to the court and obtain a ruling on them." This ruling was followed in *Lewellyn* v. *Electric Reduction Co.*, 275 U. S. 243, 248, and in *Harvey Co.* v. *Malley*, 288 U. S. 415, 418. See also *General Motors Co.* v. *Swan Carburetor Co.*, 44 Fed. (2d) 24, and *Gerlach* v. *Chicago, Rock Island, etc. Co.*, 65 Fed. (2d) 862.

The assignments of error in the Circuit Court of Appeals presented no point based upon the pleadings. The bill of exceptions disclosed no special findings of fact nor any proposition of law duly presented and relied upon during the progress of the trial. The judgment of the Circuit Court of Appeals must be reversed; the one by the District Court is affirmed.

Reversed.

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*U. S. Code Ann. "Sec. 773. Trial of issues of fact; by court. Issues of fact in civil cases in any district court may be tried and determined by the court, without the intervention of a jury, whenever the parties, or their attorneys of record, file with the clerk a stipulation in writing waiving a jury. The finding of the court upon the facts, which may be either general or special, shall have the same effect as the verdict of a jury.

"Sec. 875. Review in cases tried without jury. When an issue of fact in any civil cause in a district court is tried and determined by the court without the intervention of a jury, according to section 773 of this title, the rulings of the court in the progress of the trial of the cause, if excepted to at the time, and duly presented by a bill of exceptions, may be reviewed upon a writ of error or upon appeal; and when the finding is special the review may extend to the determination of the sufficiency of the facts found to support the judgment."